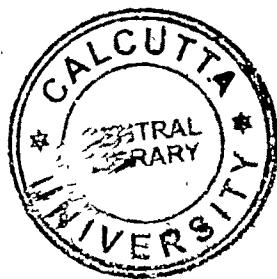
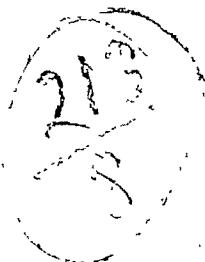


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INTRODUCTION

We express our sincere gratitude to the authorities of the University for helping us publish the 9th & 10th volumes of Calcutta University Journal of Information Studies (CUJIS).

The articles of this volume are mainly contributed by present & former students and research scholars of the Department. A number of Faculty members of different universities have also contributed to this volume.

In the Department of Library & Information Science, a number of activities have taken place recently.

Prof. Prabir Roy Choudhury, the doyen of library movement in West Bengal, died on 22nd August 2007. He was an ex-student of the Department. The condolence meeting was held in the department. He was intrinsically associated with the activities of Bengal Library Association since 1957 in different dimensions. He was to remember him Vice President of Bangiya Saksharata Prasar Samiti. We will always remember him for his contribution in formulating West Bengal Public Library Act (1979). He was also a member of the Working Committee of Raja Ram Mohan Roy Library Foundation (RRRLF) and was awarded the Fellowship of the Foundation in 2006 in appreciation of his contribution to the Library Movement. He was the nominated member of the Faculty Council in Education, Journalism and Library Science of this University.

With deeply felt sorrow, we record here the passing away of Dr. Piyush Kanti Mahapatra. The condolence meeting was held in the University on this occasion. He was an ex-student as well as a former teacher of the Department. He had been teaching in this department for more than three decades. He also held the tenure of the Headship for a long time. His book, "The Computer in Library Services" (1985) was a pioneering work on the subject. He wrote more than a dozen of books on Library & Information Science. Dr. Mahapatra was a member of FID and life member of several national associations. He served the Asiatic Society, Kolkata as the Library Secretary of the Executive Council of the Society for many years. He was associated with a number of universities in various capacities. He was a member of the UGC Panel of Library & Information Science as well as the UGC Committee for Curriculum Development. He was the Chairman of the Calibnet Standardization Committee, set up by NISSAT. He had attended a number of international conferences & seminars and visited USA, UK, Canada, France, Singapore, Hong Kong, Thailand and presented paper in FID General Assembly.

It is a great pleasure to all that Professor (Dr.) Bhubaneswar Chakrabarti had been awarded an eminent teacher of the University and got the award at the University Convocation, 2007.

Dr. Ratna Bandyopadhyay visited Durban, South Africa to attend the "World Library & Information Congress : 73rd IFLA General Conference & Council" on 19-23 August, 2007. Dr. Bandyopadhyay's paper, "Health related services for women through library services in West Bengal" was read in the meeting and was appreciated.

Two research projects submitted to the University under the UPE scheme of UGC have been sanctioned under the supervision of Dr. Ratna Bandhopadhyay and Dr. Biplab Chakrabarti of the Department.

In the fifth (5th) Refresher Course of the Dept. of LIS, Dr. Piyush Kanti Panigrahi acted as the coordinator.

Dr. Biplab Chakrabarti was reelected to the membership of syndicate of the University. He was elected also as a member of the Faculty Council in Education, Journalism and Library Science of the University.

Smt. Sarmistha Datta Bhattacharya has been awarded Ph.D degree from the University for her research work on the topic "An Approach to Knowledge Management (KM) Problems and Solutions for Indian Situations: A Conceptual/ Operational Model for Library KM" under the guidance of Dr. Biplab Chakrabarti and Dr. Soumitra Sarkar.

Endowment scholarship named 'South-East Asian Subsistence Fellowship' has been awarded to Joyita Dasgupta and Soma Choudhury who scored highest marks in the corresponding BLIS examination and pursued MLIS Course for the years 2004 & 2005 respectively.

The pattern of admission test for the M.Phil course in LIS has been changed. Now the pattern and quality of the questions are in the similar line to that of the NET/SET examination. This course has been designed mainly to acquaint the students with the latest developments of the Library & Information Science and to make the students proficient in methods and techniques of research along with the application with the help of Interdisciplinary approaches.

M.Phil Course in LIS was started in the year 2003. Today there is a time to change the Syllabus. Since July 2007, a number of meetings of the Advisory Committee, M.Phil Course in LIS, CU have been arranged for this purpose. The recommendation of revision by the FC in Education, Journalism and Library Science has been forwarded to the Syndicate for consideration.

One of the important achievements of the Department was to have Prof. S. Arunchalam and Dr. N.R. Satyanarayana as guest teachers. Prof. Arunachalam is attached to M.S. Swaminathan Research Foundation as Distinguished Fellow. He is the Honorary Fellow of the Chartered Institute of Library & Information Professionals, UK and Honorary Member of the American Society for Information Science & Technology, USA. He was nominated for Stockholm Challenge Award Ambassador in 2001. He was also nominated to the Editorial Board of Electronic Journal of Information Systems in developing countries as a Trustee of the Electronic Publishing Trust (2001) and to the International Advisory Board of the IFCD. Dr. N.R. Satyanarayana is the Head of the Department of Library & Information Science, Lucknow, University. He is the author of a number of research articles and books which include 'A manual of library automation & networking', 'Problems of Information Science', 'Manual of computerization in libraries', 'User education in academic libraries' etc. The Department of LIS, CU is very much grateful to them.

Biplab Chakrabarti
Hony. Executive Editor

DIGITAL LIBRARY CREATION BY GREENSTONE DIGITAL LIBRARY SOFTWARE

SUSMITA CHAKRABORTY*

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Introduction :

Definition : Digital Library is a computerized "library" that would supplement, adds functionality, and may even (in long run) replace traditional libraries. It contains digital objects accessible via internet; uses handle servers to maintain the repository.

Problems : Problems associated with a digital library are manifold: quality problem, authority control problem, organizational problem, fluidity problem, access control problem, digital rights management problem, technology-related problem, preservation problem, legal problem, political problem, service-related problems, hybrid (integrated) or independent problem regarding justifying the existence and defining the role of librarian, defining the users of the library.

We need powerful software that can address many- if not all- of the above problems.

Software used : Greenstone Digital Library (GSDL) is a suite of software that can manage digital documents with images, movies, etc. in variety of formats into an easy-to-use fully searchable vast collection to be served on WWW, or published on CD or other removable media.

It is open source (with GNU General Public License), multilingual, multiplatform, and highly configurable software.

Greenstone is produced by the New Zealand Digital Library Project at the University of Waikato, and developed and distributed in cooperation with UNESCO and the Human Info NGO.

* Greenstone v2.72 – released Dec 2006 Ver 2.72

* Greenstone 3.02 released Feb 2007 Ver 3.02

Steps of Creation :

We will create a small digital library consisting of MS Word (.doc), Portable Document Format (.pdf) HyperText Markup Language (.htm) and Power Point Presentation (.ppt) files taking at one from each category.

* Assistant Librarian and also ex-student, DLIS, CU.

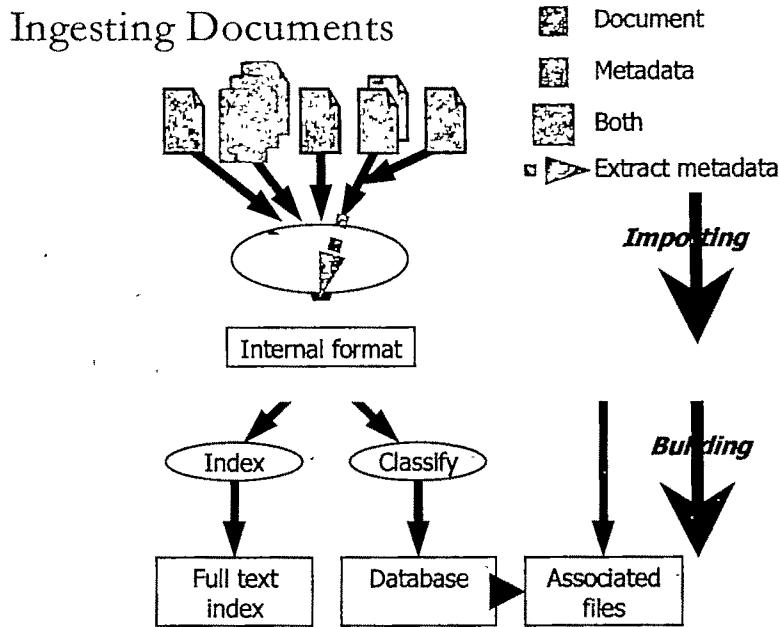
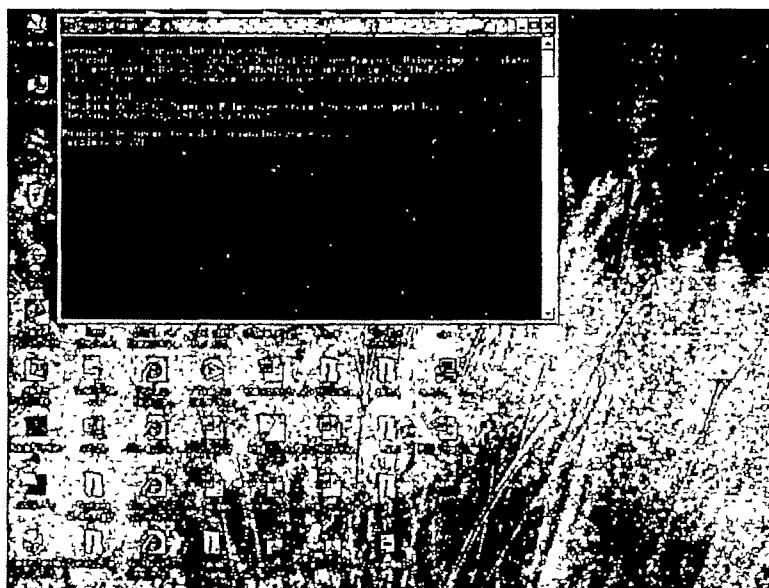


Fig. : Working with documents in GSDL

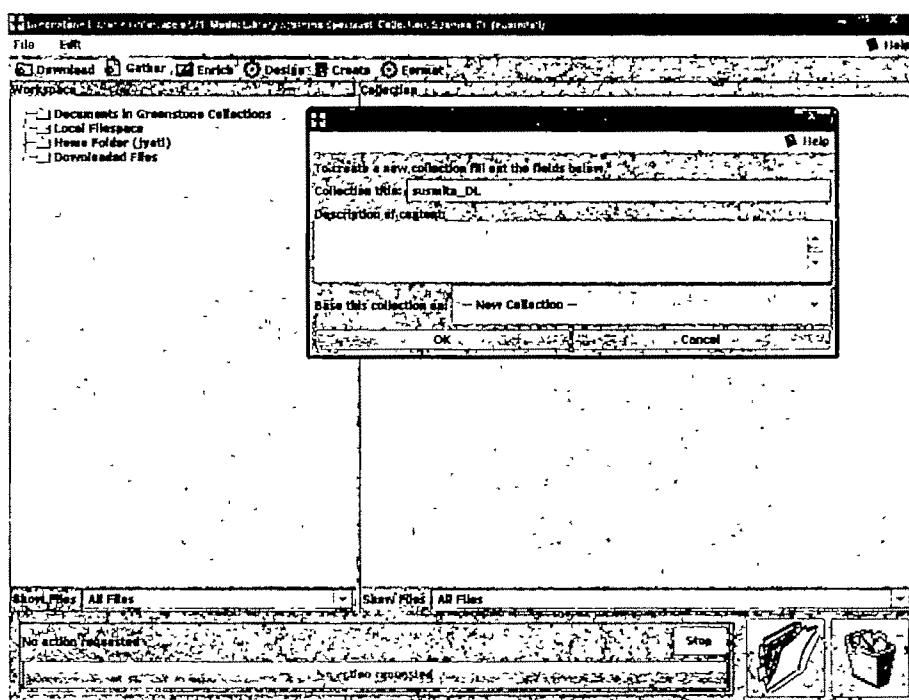
Steps Followed :

First we have to **open Greenstone Librarian Interface (Start → Program Files → Greenstone Digital Library Software → GLI)**

- * GLI will open



- A remark will come 'Enter the Library'
- If clicked, it will open the browser (here, Internet Explorer) where we can see all the previously-created-collections.
- If No.3 does not come automatically, we have to open Internet Explorer and to give the URL of GSDL (GSDL's lib.exe file's URL)
- To start our collection, we have to select File → New → A window (like below) will appear where we have to type the collection name in the 'Collection Title' box (Susmita_DL) and some details regarding the collection in the 'Description of Content' and will 'Base this collection on' 'New Collection' (meaning we have to design this collection from scratch on our own as it is not based on any previous collection).

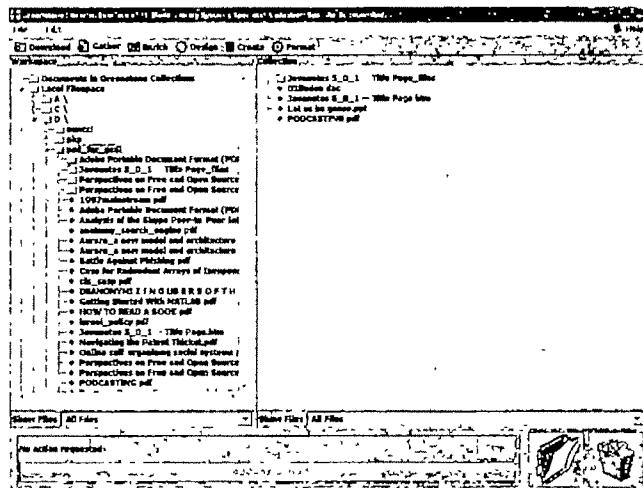


- As seen in the above screen, we can do the following activities from the GLI menu: **Download**, **Gather**, **Enrich**, **Design**, **Create** and **Format**. All these have important roles to play in the creation of a DL by GSDL as we know from further discussions.

'**Download**' is for gathering materials for our DL directly from Internet.

- **Gather (Items for our collection) :**

'**Gather**' is for gathering materials for our DL. As seen in this image, 'Gather' is divided into two portions: **Workspace** on the left side and **Collection** on the right.



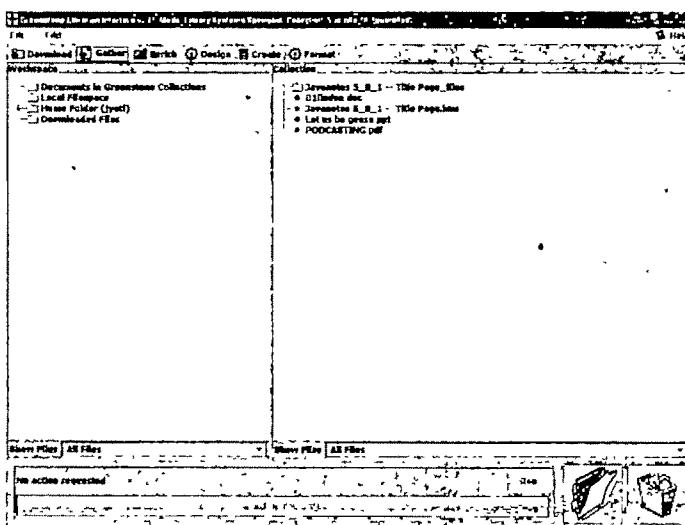
As seen in the above screen, there are source areas for collecting our materials. These are:

- Files in Greenstone Collections (from c:/Program Files/Greenstone/collect folder)
- Local Filespace
- Different Drives of the local computer

We directly go to the CD drive, by clicking get the required folder and again click to get the files stored in that folder to be displayed in the workspace in a drop-down order. We have to simply drag the files we want to include in our collection from left-hand side (workspace) to the right-hand side (collection). We have selected 4 (+1) files as decided earlier for creating a small test DL.

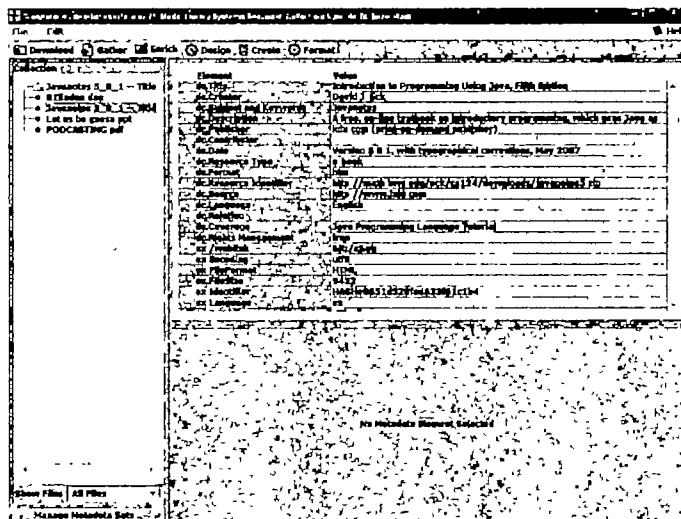
We took the following 5 files (two files for htm document and one each for pdf, doc, ppt) for our DL.

Now the GLI looks like the figure below:



- Enrich (with appropriate metadata):

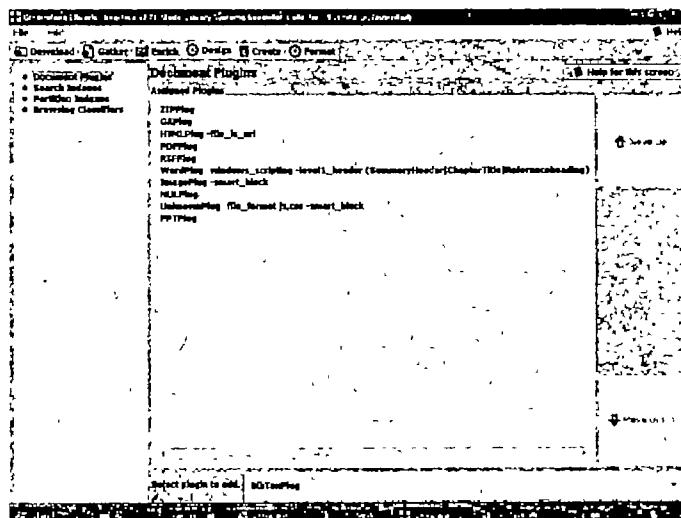
Now our materials are there without any **metadata**. We have to 'enrich' them now with suitable metadata. GSDL has provisions for other metadata but we have used the **default metadata set** i.e. **Dublin Core** Metadata and some elements (like, ex.Source) of the **Extracted metadata sets** (extracted automatically by the software).



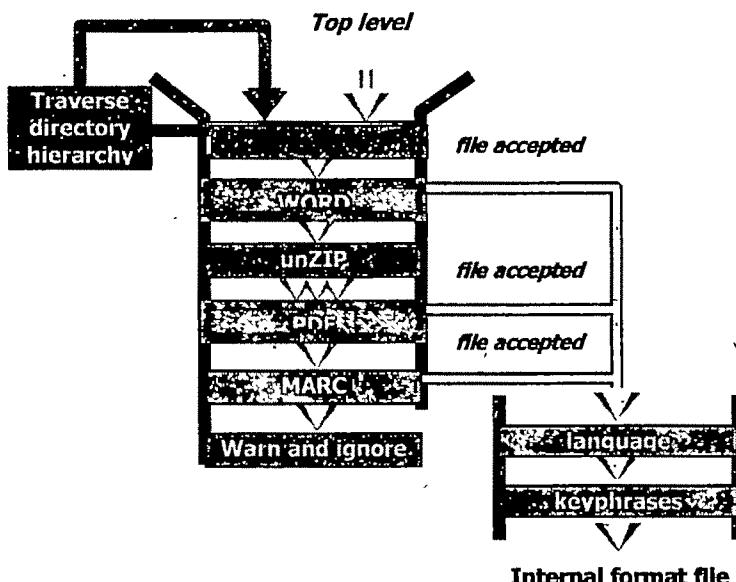
- **Design** : This part is comparatively complicated. We have different subsystems here, like

Document Plugins, Search Indexes, Partition Indexes and Browsing Classifiers

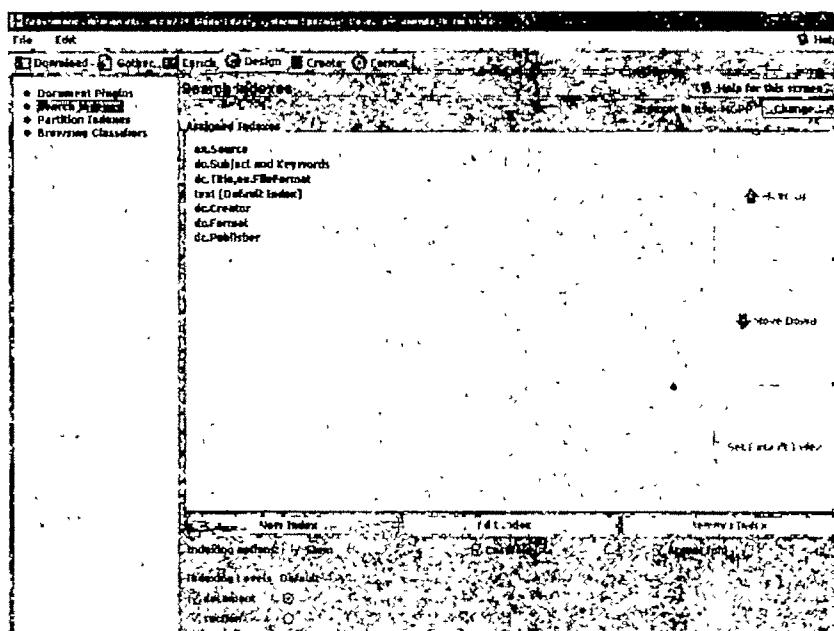
Document Plugins : GSIDL uses in-built Plugins to work with different types of files. As for e.g.: WORDPlug for word files, PPTPlug for PPT files or Unknown Plug where no specific Plug is available.



Plugin Architecture: import.pl

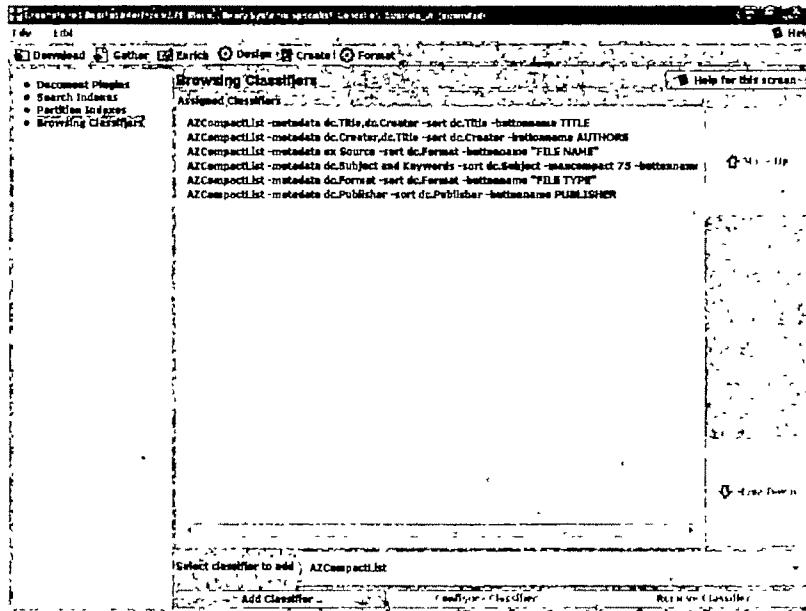


Search Indexes : Here we set the indexes through which we want to let our DL to be searched. Along with the default 'text' and extracted Source index, we have added Indexes for Author (dc.Creator), Format (dc.Format), Publisher (dc.Publisher), Title (dc.Title) and Keywords using dc.Subject and keywords (as per the image below).



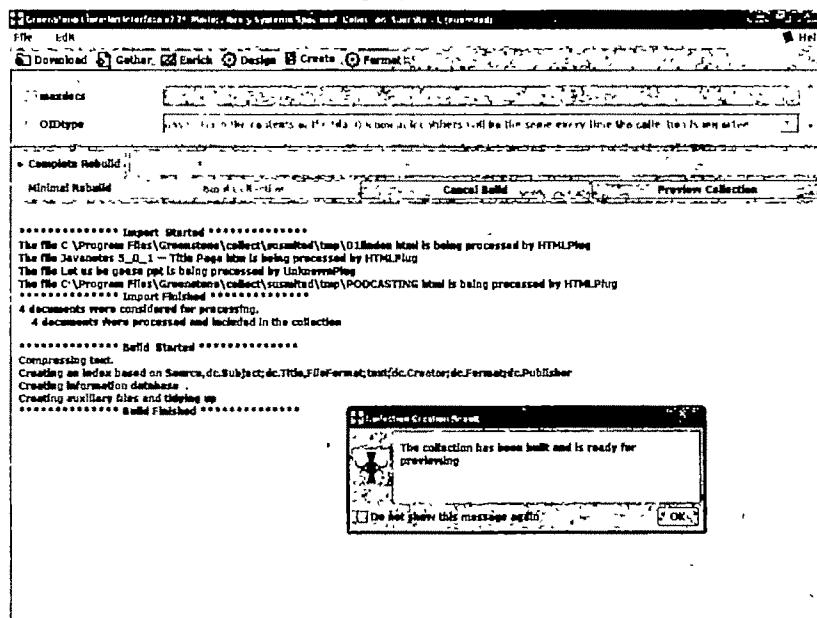
Partition Indexes : We have not used this as we do not have any documents needing chronological or hierarchical treatment for which it is very suitable.

Browsing Classifiers : After assigning indexes now we need to add the names by which the specific indexes will be browsed for searching purposes. We have selected AZCompactList and configured the classifiers as in the image below.



- **Create :**

We have completed the design part and can now 'Create' our collection.



Complete Rebuild or Minimal (Incremental) Rebuild or Cancel Build

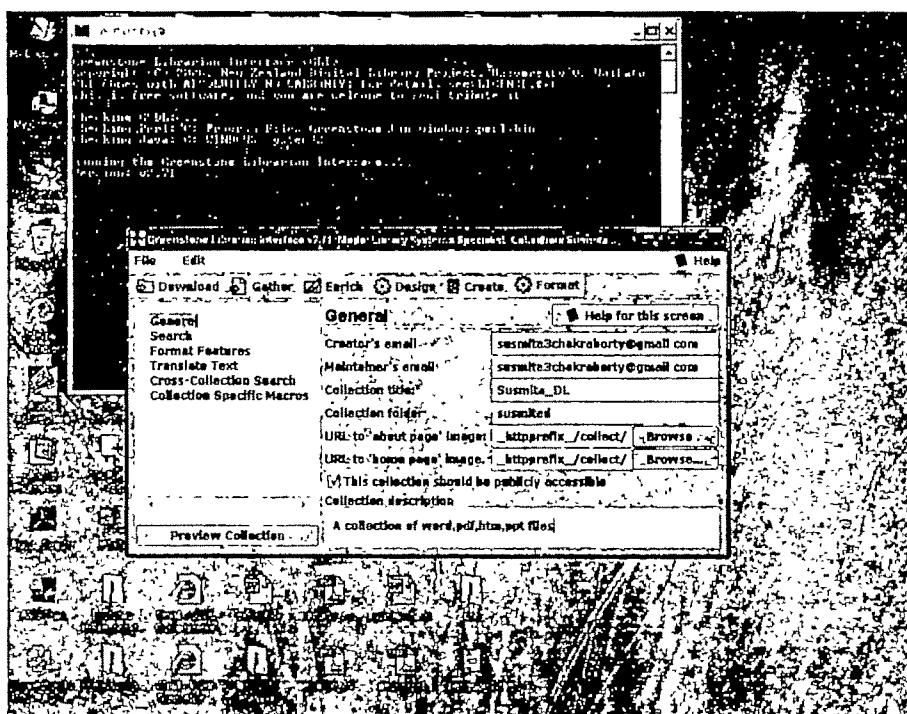
For the first time, we should tick '**Complete Rebuild**' and then '**Build Collection**'. Afterwards, we may use '**Minimal (Incremental) Build**' instead of '**Complete Rebuild**' when trying to '**Build Collection**' after insignificant changes to the existing collection. The screen says 4 documents were considered in and ultimately included by the processing. So, the '**Build**' is successful. It shows in the '**Collection Creation Result**' box that our collection is now ready for previewing. We will click **OK** and also click '**Preview Collection**' from above (next to '**Cancel Build**' button).

'Complete Rebuild' is only necessary if we add files, edit metadata or change option in the design plane. In case of any problem, we have the option of cancelling the building process by clicking '**Cancel Build**'.

- **Format** : This Includes the following features:

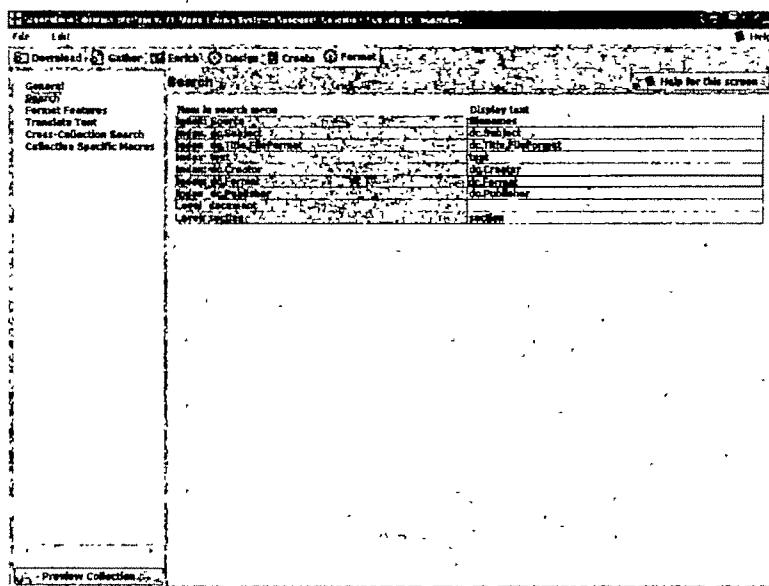
General, Search, Format Features, Translate Text, Cross-collection Search, Collection-specific Macros

General :

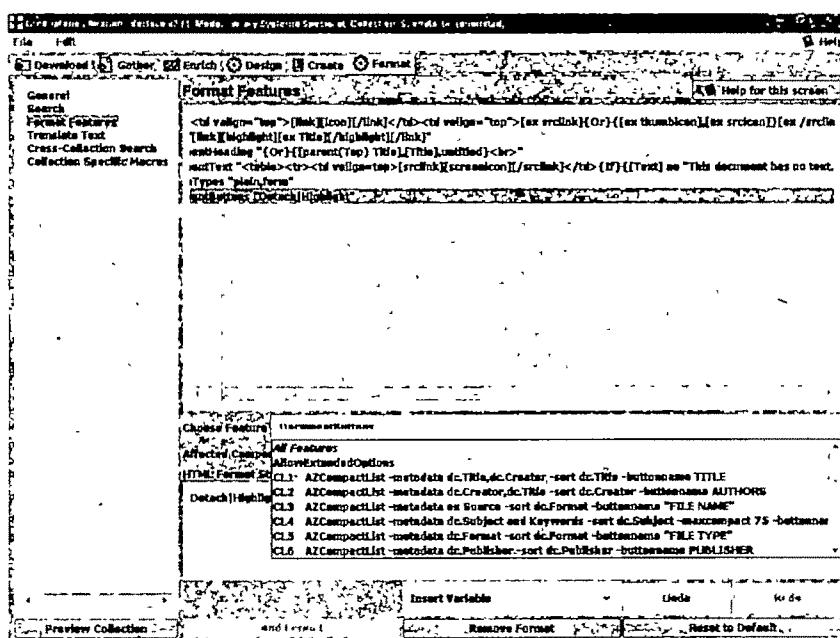


Here general information like Creator's & Maintainer's email(s) is to be provided. 'Collection title' and 'Collection description' will hold the data provided at the initial stage of the DL creation. GSDL will generate 'Collection folder name' using the collection title. Two icons can be provided in the form of URLs for the 'About Page' and 'Home Page' of the collection.

Search : We can see all the indexes used in this DL in the 'Design' part, we can also change the names of their displays.



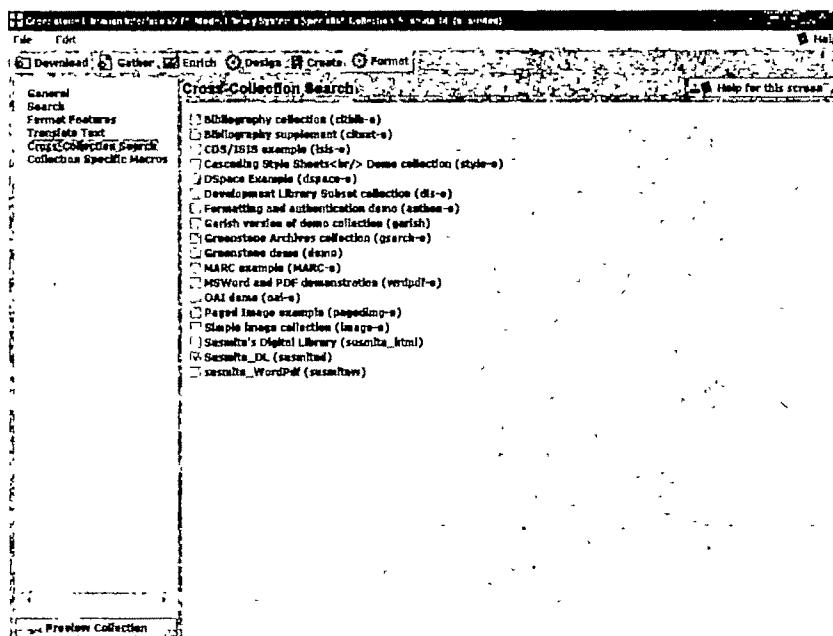
Format Features : Whatever we have assigned in the 'Design' part, the html coding for that will appear here (as shown below) :



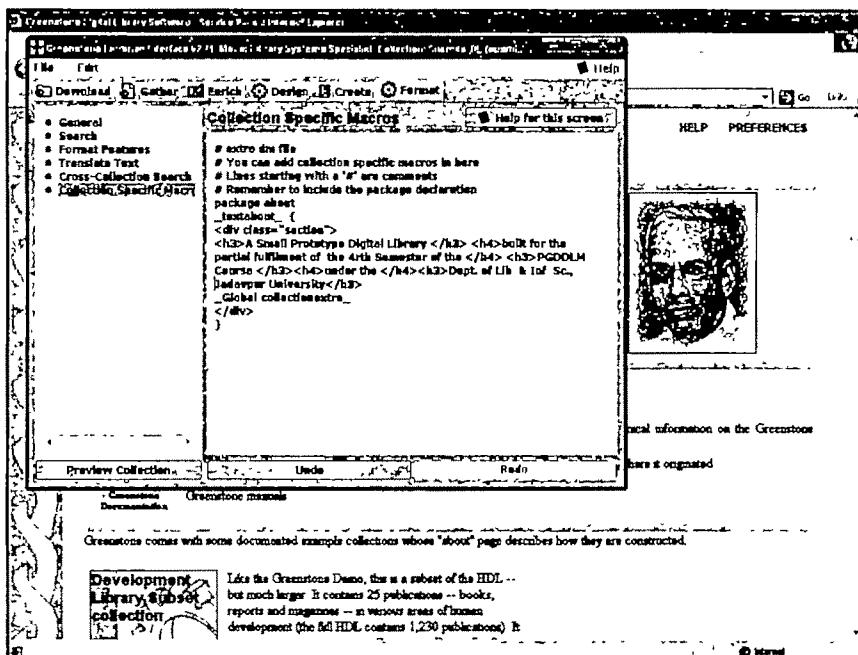
Translate Text : Different language interfaces are available for GSDL like Maori (the language of the original inhabitants of New Zealand, where GSDL has been developed) and Marathi.

We do not need this option for this particular DL.

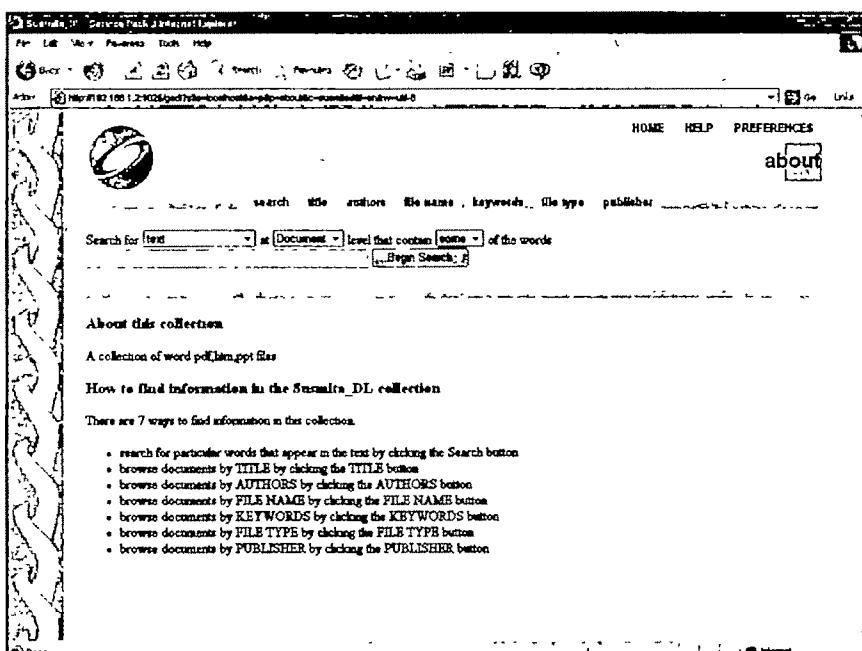
Cross-collection Search : If needed, we can make arrangement for Cross-collection Search by clicking the collections we wanted to be searched together. As for e.g., we can collect our other collections like 'Susmita's Digital Library' and 'Susmita_wordPdf' with this one ('Susmita_DL') [see the image below]



Collection-specific Macros : We can write and edit macros (Greenstone — macros) for customization of our collection get-up or the look of the all GSDL collections at one go. Macro files and CSS stylesheets are to be found in / Greenstone / images



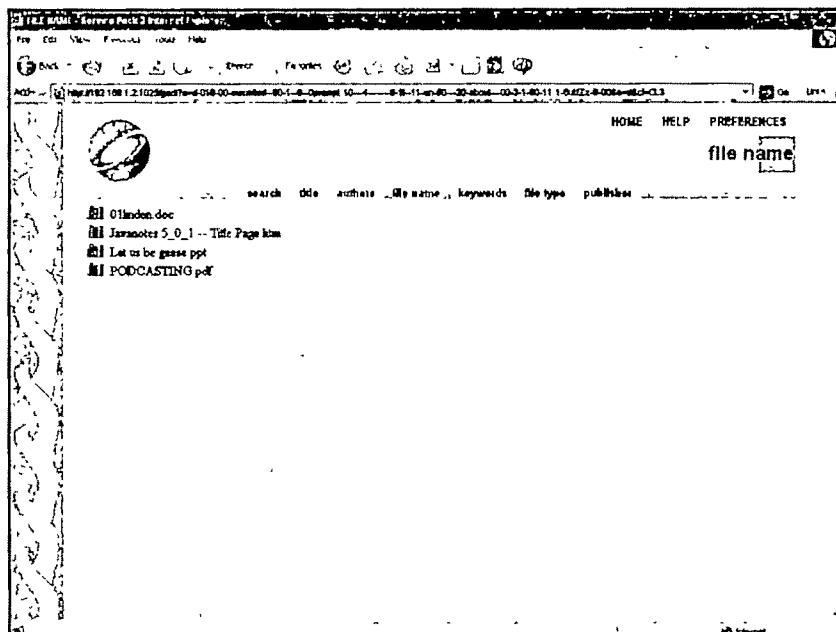
We can write macros for specific packages to change the get-up of that package.



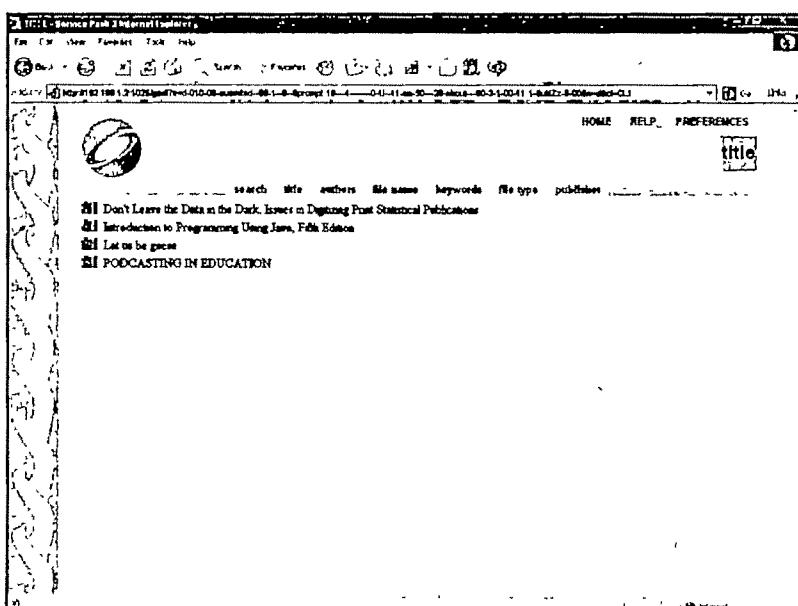
Here the ball-like symbol in the collection home-page of 'susmita_DL' represents the 'The universe of knowledge' in our mind. Whenever we take

the cursor near these icons, the names appear. If we do not give the icon, the name will be displayed instead. Another option is to give the name within the image using some image-processing software and to use that so as to display both name and image.

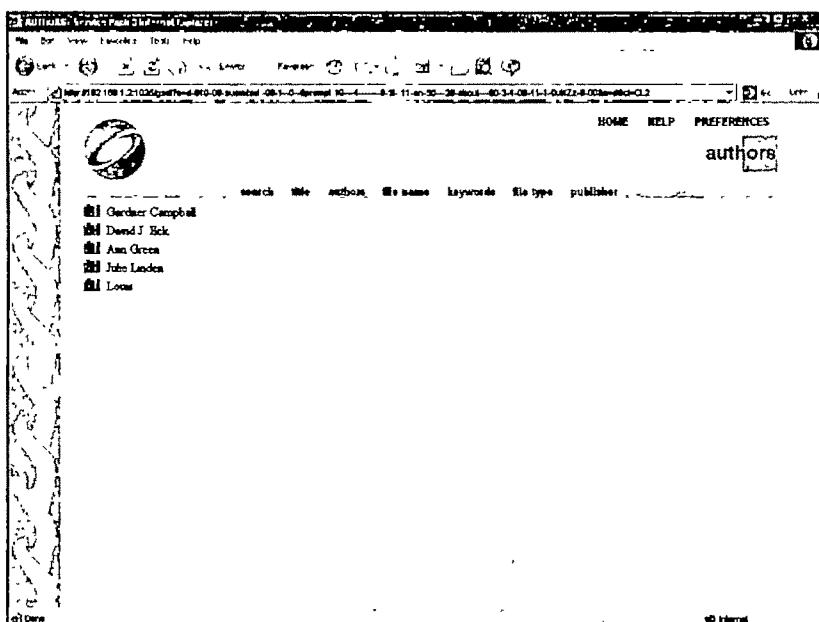
Browsing In the browser screen (Internet Explorer) :- by Filename



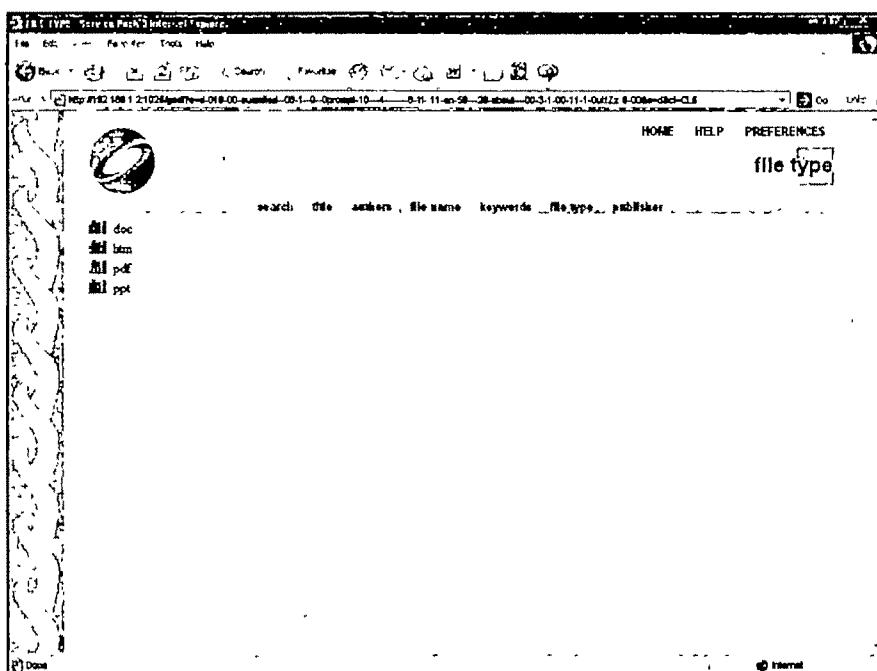
Browsing by Title



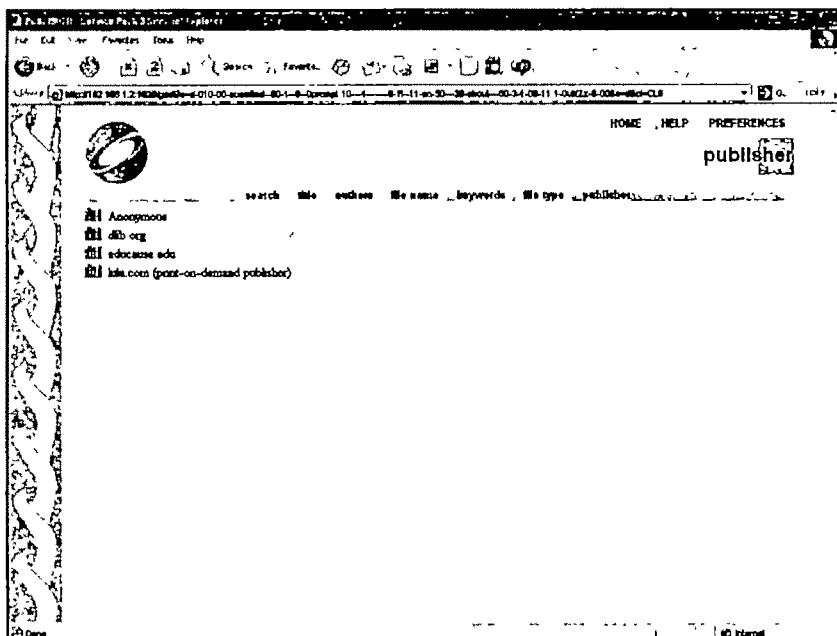
Browsing by Author



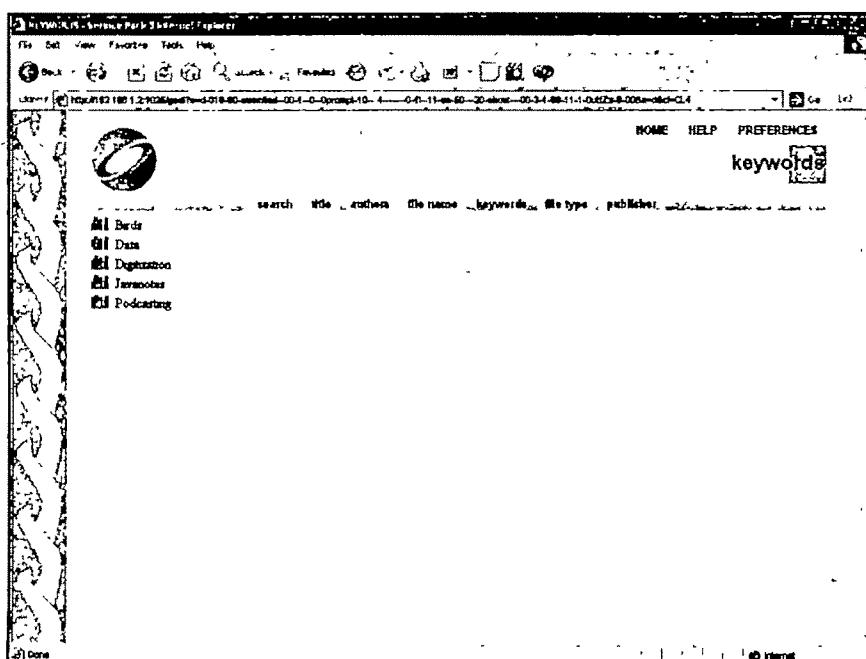
Browsing by File Type



Browsing by Publisher

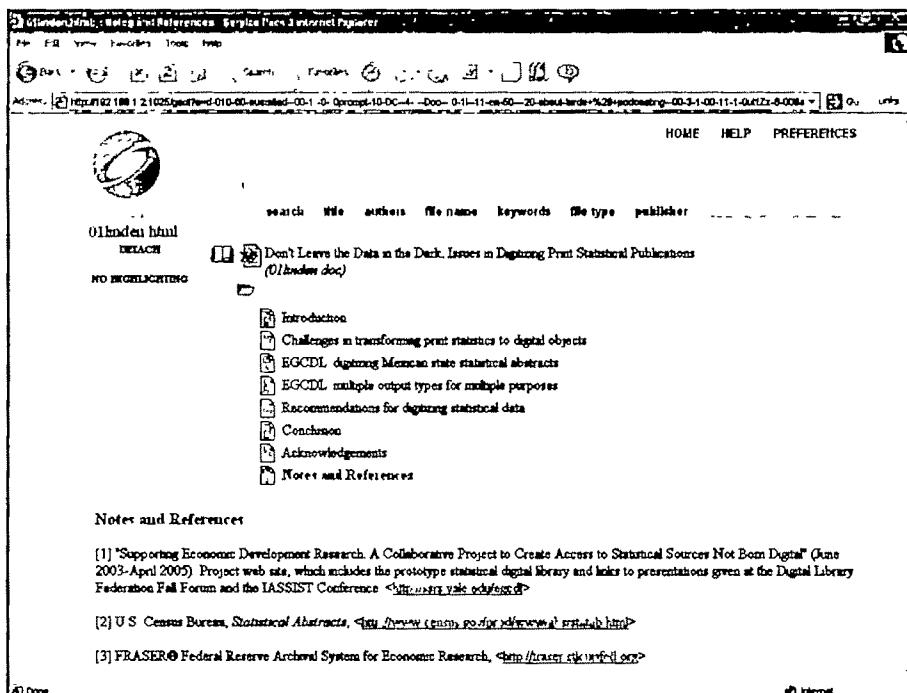


Browsing by Keywords



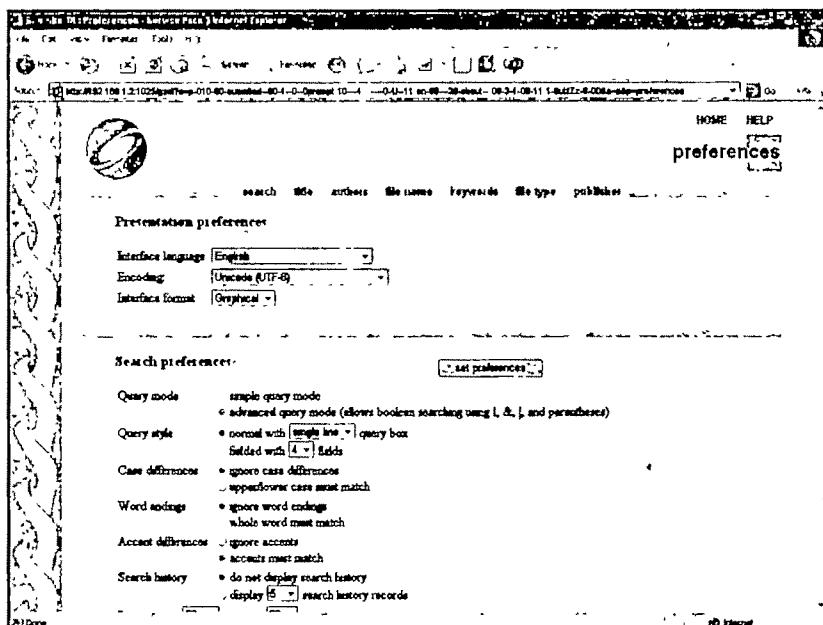
Browsing sections of a document by Section Indexing techniques:

As we have clicked 'section' in indexing part, different sections of the document appear against search and we can select a specific heading to be displayed. Here different headings and sub-headings are displayed and we clicked on the sub-heading 'Notes and references' and only this part (the last part of the document) has been displayed.



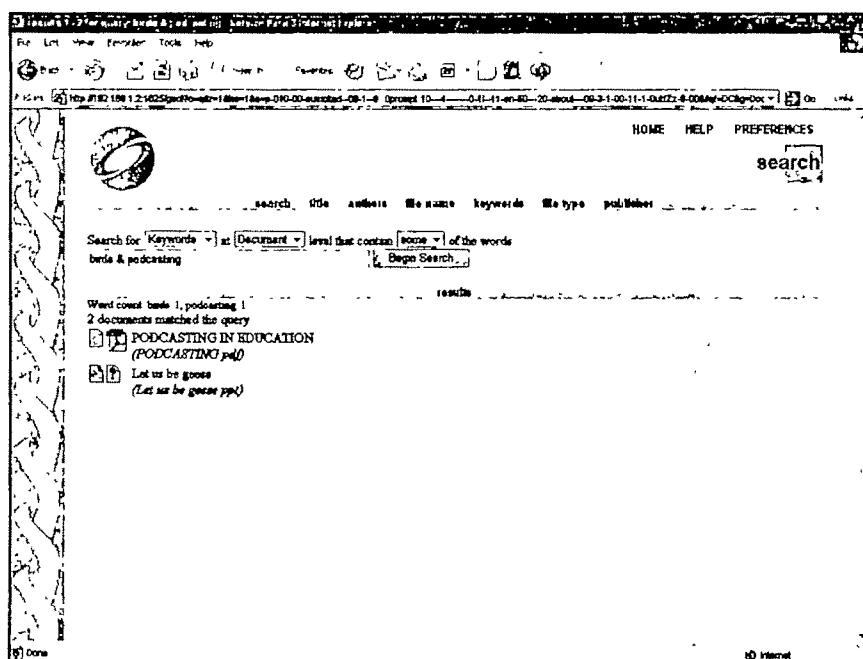
Changing search preferences:

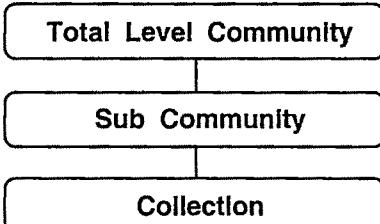
To explore the potential of GSDL, we have changed some preferences here (see image below), most important of them is to direct it to 'Ignore word endings' and to use 'Advanced search' (Boolean search).



Boolean Search :

As a result, by giving keywords search using Boolean AND (&), we give 'birds & podcasting' and get (1+1) two documents containing each of the search-word given.



	DSpace	Green Stone Digital Library Software
1.	It has been designed keeping in mind the UNIX operating system.	It has been designed keeping in mind the Windows operating system.
2.	No separate version for Windows, same version may be installed in Windows system also. But mail server is needed to be configured as Windows does not have by default mail server. Can be accessed through third party mail server.	For Windows (.exe) and Linux (.tar), separate versions present.
3.	All work are done through web browser.	Administrative work is done through GLI (Librarian Interface). Browsing and search is done through web browser.
4.	Accessible from all machines as all work is done through web browser.	Server cannot be accessed from other machines for administrative purpose, as GLI is not available from other machines.
5.	Hierarchy is like :	<p>No Community concept is present, we built collections.</p>  <p>File→New→Collection Name</p>
6.	Collection without document is possible.	At least, one document is needed for building collection.
7.	Follows only Dublin Core metadata.	Some other metadata sets may be followed along with Dublin Core metadata.
8.	No user interface available for inserting unknown format file.	It has in-built plugin sets. If the required file format is not available there, user interface is available to insert new plugins.

	DSpace	Green Stone Digital Library Software
9.	We have worked in version 1.4. Latest version is 1.4.2.	Working in version 2.62, UNESCO distributes version 2.70, All versions before 3.02 are compatible.
10.	Single collection back-up is not possible, must take total collection back-up.	Individual collection back-up possible from c:\program files\gsdl\collect\collection_name.
11.	First metadata is to be inserted and then the document will be submitted.	Document is to be submitted first, and then metadata will be incorporated.
12.	More suitable for larger systems.	More suitable for smaller systems.
13.	Much more powerful.	Less powerful.
14.	Requires : ✓ Apache Tomcat ✓ Java Development Toolkit (JDK) ✓ Postgresql	Requires : ✓ Apache ✓ Java Runtime Environment (JRE) ✓ Postgresql
15.	Users : • Super Admin • Admin • User	Users : Access is for all. But if needed, can be controlled for specific collection.

When complete, Greenstone-3 will retain all the advantages of Greenstone 2 — for example, it will be multilingual, multiplatform, and highly configurable. It incorporates all the features of the existing system, and is backwards compatible: that is, it can build and run existing collections without modification.

Conclusion :

Greenstone Support for South Asia has been created in 2006 with Dr. Sreekumar of IIM Calicut as its coordinator. So, librarians can go ahead and enjoy creating digital libraries with GSDL.

GSDL has the powerful functionalities if we can learn them carefully. To do away its lacunas and to make it more strong and stable version 3.02 has already been introduced. Java is used here; it is composed of as a network of independent modules. These parts communicate using XML. It runs in a distributed fashion. If needed, it can be distributed across different servers as

necessary. This modular design increases the flexibility and extensibility of Greenstone. GSDL has a bright and brilliant future ahead of it.

Acknowledgement : I do acknowledge Dr. Biplab Chakrabarti Reader, DLIS, CU for his valuable guidance in writing this paper.

Bibliography :

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2. New Zealand Digital Library: URL : <http://www.nzdl.org>
3. Download Greenstone 3. URL : <http://www.SourceForge.net>
4. Greenstone documentation Wiki:
URL : <http://www.greenstonewiki.cs.waikato.ac.nz/wiki/index.php>
5. Greenstone Support for South Asia :
URL : <http://greenstonesupport.llmk.ac.in/Documentation.htm>
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URL : <http://php.indiana.edu/~harter/korea-paper.htm>
7. Peter Nuernberg. Digital Libraries . Issues and Architectures.
URL : <http://www.csdl.tamu.edu/DL95/papers/huernberg/nuernberg.html>
8. Hayley Dunlop Sally Jo Cunningham Matt Jones. International Conference on Digital Libraries Proceedings of the 2nd ACM/IEEE-CS joint conference on Digital libraries URL : <http://portal.acm.org/citation.cfm?dold=544220.544278>
9. Core DL Topics. URL : <http://www.dlib.org/dlib/november06/pomerantz.htm>
10. DSpace Home Page: URL : <http://www.dspace.org>.

Abstract : The paper discusses definition of and problems related with digital libraries. It has delineated about some features of the Greenstone Digital Library Software 2.72. It has traced the steps to create a digital library with this software. Download, Gather, Enrich, Design, Create and Format features of this software have been dealt with in details. Screenshots have been used to clarify the points discussed. This software has been compared with popular digital library software DSpace. Screenshots have been used to clarify the points discussed.

Keywords : Digital Library, Greenstone Digital Library Software, Digital Library Software

RADIO FREQUENCY IDENTIFICATION (RFID) TECHNOLOGY IN LIBRARY MANAGEMENT

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Bagdogra, West Bengal.

1.0 Introduction :

The library operations get a quantum jump with the introduction of computers. The retrieval of information becomes much faster and accurate. Moreover, the application of computers, in the day-to-day and repetitive jobs of a library saves a lot of labour and time, speeds-up the operations, increases all round productivity. Thus computer technology is not only used as a tool for data processing but also for data storage and retrieval. This technology poses challenge for the existing library personnel and calls for drastic change in their approach and work culture. In India, many special and research libraries have automated their operations precisely to cope-up with the huge amount of information and data thereby making available effective, accurate, and quick library services to their users. There are very few academic libraries that have automated more than one library operation. But as more and more specially designed software packages for library operations are coming up, more areas are being covered under Computerization. The major areas where computers are being used in the housekeeping operations are acquisition, cataloging, circulation, serials control, etc. In the present day context, computerization of in-house library operations is not enough, participation in information networks is also very important. We have the libraries like IIT libraries that are highly automated and also totally manual libraries, which are really restricting the speed of academic and research in the countries. Therefore the introduction of new technology in the libraries is a matter of job enhancement and development of personnel skills for those involved, resulting in improved services to the user community. Change is nothing but a transformation of today's requirements to tomorrow's performance.

2.0 RFID Background

Radio frequency identification (RFID) is one of today's most exciting and fastest growing technologies for increasing efficiencies and improving profitability. RFID is a combination of a computer chip and a small radio antenna that allows almost any object to "self-identify". Originally developed for use in World War II, the British used it to identify their planes. The new Radio Frequency Identification (RFID) first appeared in the early 1980s where it was used for : item tracking and access control applications. These wireless automatic identification data capture systems allow for non-contact reading or writing of data and are highly effective in manufacturing and other hostile environments

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where barcode labels can not survive. Since the 1980's, RFID has established itself in a wide range of markets including livestock, retail sales, wireless transactions, courier and logistics, publishing, automated vehicle identification systems, etc.

A Radio Frequency Identification (RFID) tag is an electronic device that holds a small amount of data. Typically these tags are attached to an item and contain a serial number or other data associated with that item. We will focus on passive RFID technology, in which the tag carries no power source, but is instead powered by a radio signal from a separate RFID reader.

3.0 RFID for Libraries

RFID (Radio Frequency Identification) allows an item, for example a library book, to be tracked and communicated with by radio waves. This technology is similar in concept to a cell phone/Mobile phone. RFID is a broad term for technologies that use radio waves to automatically identify objects or documents. There are several methods of identification, but the most common is to store a serial number that identifies a document or object, and perhaps other bibliographical information, on a microchip that is attached to an antenna (the chip and the antenna together are called an RFID transponder or an RFID tag). The antenna enables the chip to transmit the identification information of a document to a reader. The reader converts the radio waves reflected back from the RFID tag into digital information that can then be passed on to computers that can make use of it.

RFID systems are being implemented for libraries as a replacement for the ubiquitous barcode system. Like barcodes, each item in the library will be tagged and the system will update the database as a tag is read. However, unlike barcodes, RFID tags do not have to be in the line of sight of a reader, which creates many potential opportunities and challenges. RFID can be used in library circulation operations and theft detection systems. RFID-based systems move beyond security to become tracking systems that combine security with more efficient tracking of documents throughout the library, including easier and faster charge and discharge, inventorying, and materials handling (Boss 2004). This technology helps librarians reduce valuable staff time spent scanning barcodes while charging and discharging items. RFID is a combination of radio-frequency-based technology and microchip technology. The information contained on microchips in the tags affixed to library documents is read using radio frequency technology, regardless of item orientation or alignment (i.e., the technology does not require line-of-sight or a fixed plane to read tags as do traditional theft detection systems). The RFID gates at the library exit(s) can be as wide as four feet because the tags can be read at a distance of up to two feet by each of two parallel exit gate sensors.

4.0 Components of an RFID

A standard RFID system consists of four main parts :

- A) RFID tags that are electronically programmed with unique information

- B) Readers or sensors to query the tags
- C) Antenna
- D) Server on which the software that interfaces with the integrated library software is loaded.

4.1 Tags

The heart of the system is the RFID tag, which can be fixed inside a book's back cover or directly onto CDs and videos. This tag is equipped with a programmable chip and an antenna. Each paper-thin tag contains an engraved antenna and a microchip with a capacity of at least 64 bits. There are **three types of tags** : "read only", "WORM", and "read/write" (Boss 2003). "Tags are "read only" if the identification is encoded at the time of manufacture and not rewritable. "WORM" (Write-Once-Read-Many) tags are programmed by the using organization, but without the ability to rewrite them later. "Read/write tags," which are chosen by most libraries, can have information changed or added. In libraries that use RFID, it is common to have part of the read/write tag secured against rewriting, e.g., the identification number as well as bibliographic information of the documents.

4.2 Readers

RFID readers or receivers are composed of a radio frequency module, a control unit and an antenna to interrogate electronic tags via radio frequency (RF) communication. The reader powers an antenna to generate an RF field. When a tag passes through the field, the information stored on the chip in the tag is interpreted by the reader and sent to the server, which, in turn, communicates with the integrated library system when the RFID system is interfaced with it (Boss 2004). RFID exit gate sensors (readers) at exits are basically two types. One type reads the information on the tag(s) going by and communicates that information to a server. The server, after checking the circulation database, turns on an alarm if the material is not properly checked out. Another type relies on a "theft" byte in the tag that is turned on or off to show that the item has been charged or not, making it unnecessary to communicate with the circulation database.

4.3 Antenna

The antenna produces radio signals to activate the tag and read and write data to it. Antennas are the channels between the tag and the reader, which controls the system's data acquisitions and communication. The electromagnetic field produced by an antenna can be constantly present when multiple tags are expected continually. Antennas can be built into a doorframe to receive tag data from person's things passing through the door.

4.4. Server

The server is the heart of some comprehensive RFID systems. It is the communications gateway among the various components (Boss, 2004). It receives the information from one or more of the readers and exchanges

information with the circulation database. Its software includes the SIP/SIP2 (Session Initiation Protocol), APIs (Applications Programming Interface) NCIP (National Circulation Interchange Protocol) or SLNP necessary to interface it with the integrated library software but no library vendor has yet fully implemented NCIP approved by NISO. The server typically includes a transaction database so that reports can be produced.

5.0 Application of RFID System In Libraries

Areas where RFID can be applied for Library Management.

5.1 RFID Label Printer

An RFID printer is used to print the labels with an individual barcode, library logo, etc. When the print is applied, it simultaneously programs the data in to the chip. After this process, the RFID label is taken from the printer and applied to the book.

5.2 Handheld Reader for Inventory control

The portable handheld reader can be moved along the items on the shelves without touching them. The data goes to storage unit, which can be downloaded at a server later on, or it can go to a unit, which will transmit it to the server using wireless technology. The inventory wand will cover three requirements:

- Screen the complete book collection on the shelves for inventory control.
- Search for books, which are misshelved.
- Search for individual book requested.

5.3 External Book Return

Libraries can offer a distinct service that is very useful for users, such as the ability to return books when the **library is closed**. An external book return is a machine with a slot with a chip RFID reader integrated into the wall. It works the same way as the self checkout station. The user identifies himself/ herself (if required by the library), and then puts the book(s) in to the slot. Upon completing the return, the user will receive a receipt showing how many and which books were returned. Since they have already been checked in, they can go directly back onto the shelves. These units can also be used with sorter and conveyor systems.

5.4 Self-charging/Discharging

The use of RFID reduces the amount of time required to perform circulation operations. This technology helps librarians eliminate valuable staff time spent scanning barcodes while checking out and checking in borrowed items. For the users, RFID speeds up the borrowing and return procedures. Library employees are released for more productive and interesting duties. Staffs are relieved further when readers are installed in book drops.

5.5 Reliability

The readers are highly reliable. Several vendors of RFID library systems claim

an almost 100 percent detection rate using RFID tags (Boss 2004). Some RFID systems have an interface between the exit sensors and the circulation software to identify the items moving out of the library. Were a library user to leave the library and not be caught, the library would at least know what had been stolen. If the user card also has an RFID tag, the library will also be able to determine who removed the items without properly charging them. Other RFID systems encode the circulation status on the RFID tag. This is done by designation a bit as the "theft" bit and turning it off at time of and on at a time of discharge. If the material that has not been properly charged is taken past the exit gate sensors, an immediate alarm is triggered. Another option is to use both the "theft" bit and the online interface to an integrated library system, the first to signal an immediate alarm and the second to identify what has been taken out.

5.6 High-Speed Inventorying

A unique advantage of RFID systems is their ability to scan books on the shelves without tipping them out or removing them. A hand-held inventory reader can be moved rapidly across a shelf of books to read all of the unique identification information. Using wireless technology, it is possible not only to update the inventory, but also to identify items, which are out of proper order.

5.7 Automated Materials Handling

Another advantage of RFID technology is automated materials handling. This includes conveyor and sorting systems that can move library materials and sort them by category into separate bins or onto separate carts. This significantly reduces the amount of staff time required to ready materials for re-shelving.

6.0 Advantages of RFID Technology

Some of the main advantages of RFID in Libraries are as follows :

- a. It is a new technology with tremendous potential for multiple applications in the future.
- b. It is a flexible technology, which combines security and item identification in a single tag and reduces library losses by providing effective library detection systems.
- c. It is designed to work efficiently with a materials sorting system, which will automate the check-in and check-out processes.
- d. RFID eliminates the applied labor of manual material checkout and return processes. The self-check machines are extremely user-friendly. Multiple items can be checked out at the same time by simply passing the materials over the scanner. There is no need to align or position materials for checkout and all materials (books and A/V) are checked out the same way.
- e. Best of all, combining RFID technology at the circulation desk, self-check machines and eventually the Tech-logic materials sorting system will free

circulation staff to perform direct patron information services (both in person and by telephone) rather than performing repetitive circulation transactions.

- f. Improves patron service & staff productivity.
- g. Provide efficiency to collection management.
- h. Provide wireless inventory management.
- i. Eliminate many sources of repetitive stress injuries.
- j. It gives better availability of books as the library database is updated in real time.
- k. Inventory is 20 time faster than with barcodes.
- l. Free librarians to focus on doing what they do best—assisting patrons.
- m. **RFID has several advantages over barcode**, including :

 - a) Barcode requires strict, line of sight access, RFID tags can be read through a variety of substances, irrespective of orientation.
 - b) Several RFID tags can be read at one time, further accelerating all scanning activities.
 - c) Barcodes contain a fixed amount of data which RFID tags incorporate, while providing extra rewriteable space for additional data.
 - d) RFID tags are more robust and tamper resistant than barodes.

7.0 Disadvantages of RFID System :

- a. **High cost.** The major disadvantage of RFID technology is its cost. While the readers and gate sensors used to read the information typically cost around \$2,000 to \$3,500 each; and the tags cost **\$40 to \$.75** each.
- b. **Accessibility to compromise.** It is possible to compromise an RFID system by wrapping the protected material in two to three layers of ordinary household foil to block the radio signal (Boss 2004). It is also possible to compromise an RFID system by placing two items against one another so that one tag overlays another. That may cancel out the signals. This requires knowledge of the technology and careful alignment.
- c. **Removal of exposed tags.** RFID tags are typically affixed to the inside back cover and are exposed for removal. This means that there would be problems when users become more familiar with the role of the tags (Boss 2004). In Indian libraries, it is a major challenge to keep the tags intact.
- d. **Exit gate sensor (Reader) problems.** While the short-range readers used for circulation charge and discharge and inventorying appear to read the tags 100 percent of the time (Boss 2004), the performance of the exit gate sensors is more problematic. They always don't read tags at up to twice the distance of the other readers. There is no library that has done a before and after inventory to determine the loss rate when RFID is used for security.

- e. **User Privacy Concerns.** Privacy concerns associated with item-level tagging is another significant barrier to library use of RFID tags. The problem with today's library RFID system is that the tags contain static information that can be relatively easily read by unauthorized tag readers. This allows for privacy issues described as "tracking" and "hot listing" (Ayre 2004).
Tracking refers to the ability to track the movements of a book (or person carrying the book) by "correlating multiple observations of the book's bar code" (Molnar and Wagner 2004) or RFID tag. Hot listing refers to the process of building a database of books and their associated tag numbers (the hot list) and then using an unauthorized reader to determine who is checking out items in the hot list.
- f. **Reader collision.** The signal from one reader can interfere with the signal from another where coverage overlaps. This is called reader collision. One way to avoid the problem is to use a technique called time division multiple access, or TDMA. In simple terms, the readers are instructed to read at different times, rather than both trying to read at the same time. This ensures that they don't interfere with each other. But it means any RFID tag in an area where two readers overlap will be read twice (FAQ 2004).
- g. **Tag collision.** Another problem readers have is reading a lot of chips in the same field. Tag clash occurs when more than one chip reflects back a signal at the same time, confusing the reader. Different vendors have developed different systems for having the tags respond to the reader one at a time. Since they can be read in milliseconds, it appears that all the tags are being read simultaneously (FAQ, 2004).
- h. **Lack of Standard.** The tags used by library RFID vendors are not compatible even when they conform to the same standards because the current standards only seek electronic compatibility between tags and readers. The pattern of encoding information and the software that processes the information differs from vendor to vendor; therefore, a change from one vendor's system to the other would require retagging all items or modifying the software (Boss 2004).

8. Tag Life and Recent Developments

RFID tags last longer than barcodes because the technology does not require line of-sight. Most RFID vendors claim a minimum of 100,000 transactions before a tag may need to be replaced (Boss 2004).

Recent developments in hardware and software for RFID systems have increased the potential of this technology in library automation and security. 'Today, the one important result for libraries is the ability to use non-proprietary systems, now that the new generation of RFID-chips with standard ISO 15693 (to be integrated into ISO 18000-3) is available,' explains Dr. Christian Kern, system development manager of Bibliotheca RFID Library Systems, a Swiss company specialising in such systems for libraries. "With this technology,

libraries do not have to depend on one single supplier for tags. As libraries make a long-term investment, which mainly consists of the quantity of tags needed, this is a very important requirement."

9.0 Vendors of RFID

The products of six manufacturers of library RFID systems are available in India through their business associates : Biblioteca, Checkpoint, ID Systems, 3M, X-ident technology GmbH represented by Infotek software and systems in India and TAGSYS—the last represented by Tech Logic, Vernon, Libsys in India and VTLS. There are several other companies that provide products that work with RFID, including user self-charging stations and materials handling equipment.

10. Conclusion

It is quite clear from the above discussion that an RFID system may be a comprehensive system that addresses both the security and materials tracking needs of a library. RFID in the library is not a threat if best practices guidelines followed consistently, that it speeds up book borrowing and inventories and frees staff to do more user-service tasks. The technology saves money too and quickly gives a return on investment. It is important to educate library staff and library users about RFID technology before implementing a program. It may be good for librarians to watch developments in RFID until the cost of tags comes down to **\$.20** or less, the figure which some librarians have determined is the key to their serious consideration of it. While library RFID systems have a great deal in common with one another, including the use of high frequency (13.56 MHz), passive, read-write tags, lack of a standard and compatibility of tags produced by different vendors is a major problem in implementation of RFID in libraries. Current standards (ISO 15693) apply to container-level tagging used in supply chain applications and do not address problems of tracking and hot listing. Next generation tags (ISO 18000) are designed for item level tagging. The newer tags are capable of resolving many of the privacy problems of today's tags. However, no library RFID products are currently available using the new standard. Both cost and equipment may make RFID prohibitive in developing countries at this time.

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CHILDREN'S LIBRARY SERVICE-AN OVERVIEW

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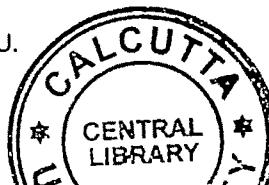
Education is accepted as indispensable for the progress of human culture and civilization and there is the least doubt that books still remain as the most effective tools of education, inspite of the prevalence of electronic media. The most important and helpful way by which a child can become aware of the world outside his sphere of education in his home and school, is by reading about the things he cannot actually experience. Wide reading of good books available widens the horizon of a child's knowledge by enlarging his experience of the world about him, develops his thinking power and enables him in expressing himself much better, clearly in writing.

The young child is very receptive and uninhibited. The habit of reading good books and using libraries and their resources are most easily acquired at this age which continues to enrich his life in future. Childhood should be rich both educationally and socially so that the child can develop to his full potential and it is essential that the child is exposed to all forms of literature appropriate to his stages of development. Otherwise, he will fallback on whatever comes to hand and this may be reading material which is not conducive to his mental development.

The only medium through which right type of books can be possibly supplied to each and every child of the society without distinction of caste, creed, sex, religion, social status and economic condition is a public library. The function of a Public Library is not only to satisfy, but also to promote reading habit by making available books on various subjects. One of the reasons for providing service to children by public libraries arises out of the fact that apart from well financed big schools, books on wide variety of subjects are not available in other schools due to lack of fund. Besides, schools libraries are restricted to the students of respective schools only and no other children are allowed to from outside. Here comes the role of well equipped Public Library exclusively meant for children or having specific provision for children. The more such libraries are established, the more it will be possible to spread the beneficial effect of library to those for whom these are meant for.

The views of eminent authorities may well be considered in this context. Dr. S.R. Ranganathan's Second Law of Library Science, 'Books for all' calls for urgency of making books and other reading and kindred material available to children. The report of the Working Party appointed by the Minister of Education in March 1961 under the Chairmanship of Sir Sydney Roberts on Standards of Public Library Service in England and Wales, while stating the objectives and functions of the Public Library Service, commented that all libraries should make special provision for children and should do all they can

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to ensure that children are encouraged to use the library. They should also endeavour to cater for the special need of young adults. One of the factors affecting the efficiency of any library service was considered to be 'the maintenance of high standard of quality [of children's books provided], both as regards content and condition [and that this] is more important than the coverage of a wide range of books published'. It was also considered 'that every library providing a basic library service should buy annually not less than 1,500 volumes of children's books'. One of the strong recommendations of the group concerned with Library Services for Children, at the UNESCO Delhi Seminar on "Public Libraries for Asia" organized at Delhi in 1955 is that "all public libraries should provide services for children and young people as an integral part of their service to the community." According to Standards for Public Libraries issued by IFLA, specific library provision must be made to cover the child's need at all ages and ability levels from infancy to the age of 14 years and that 1/5th of the total stock should be for children.

Contribution of Some Eminent Librarians

Contributing to the growth and strength of children's libraries have been the Librarians themselves. Even before there were training schools for children's librarians, there were a few great innovators in the library profession such as Caroline M.Hewins who saw service to children as part of the main stream and a very important part of librarianship. For 50 years, Librarian of the Hartford Public Library and it's fore runner the Hartford Young Men's Institute, she built up collection of children's books, issued quarterly lists of suggested good reading and urged schools to become subscribers to the Hartford Young Men's Institute. One can imagine the enrichment the lives of the boys and the girls received through reading aloud, story-telling, dramatics and nature club, all typical of the activities she initiated in the children's room which she managed to open in 1904 in a house next door to the Hartford Public Library.

Another person of great influence in library work with children, though not a children's librarian, was Mary Wright Plummer who started the second library school in the country at Pratt Institute, Brooklyn. She opened a children's room and appointed Anne Carroll Moore, a children's librarian. Anne Carroll Moore moved to New York Public Library in 1906 to become superintendent of the newly formed Department of Work with Children. There she remained for 35 years, her name almost legend at home and abroad. Her great gift for "festival" set a pattern for "bringing children and books happily together."

A Canadian Librarian, whose influence has not only reached children's librarians of the U.S. but throughout the English speaking world is Lillian Smith, formerly Librarian of Boys and Girls House, Toronto Public Library. Her book the *Unreluctant Years* is a source of inspiration and a guide in book selection. In 1949, Edgar Osborne, Librarian of Derbyshire County, England, gave the Osborne Collection of Early Children's Books to the Toronto Boys and Girls House as recognition of its outstanding work with children and young people, another tribute to Ms. Smith.

Children's Library-Formation

Children's libraries may be formed either exclusively for children or a separate children's section may be established within the premises of a Public Library.

According to O.O.Omelayole, Nigerian children's library expert, children's libraries are an integral part of the public library and are financed from the same source. Usually, children's libraries are sections or department of state libraries. In some cases where the children's library occupies a wing or part of floor of a building, there is a provision for its own reading area as well as a separate circulation system. In addition an auditorium or hall is made available for the use of the children for film show, story hours and other cultural activities.

In the context of children's department and room of a library, A.L.A. glossaries concept is : "Children's department : 1. The part of a library developed to collections and services for children, 2. Administrative unit of the public library system that has charged of work with children in the central children's room and all other service outlets offering services to children, synonymous with junior department and juvenile department. Children's room : a room in central library or in a branch of a public library set aside for services and collections for children."

Types of Services

A public library service for children should consist of (a) books for home reading (b) reading room facilities and (c) books for reference.

The provision for books for home-reading is the most important aspect of the public library service and is the one which is used more than any other by members of the library. All children's libraries should have provision for a spacious reading room. If a reading room can be provided where the children can go and read books, periodicals and newspapers, an important educational and social service can be provided. The third form of service is the reference service. It is important that all children in any children's library, even the smallest, should be given sympathetic, helpful and informed assistance to their requests for information. This aspect of library work has in recent years been called "assistance to readers".

Collection of Books

An adequate supply of good books on a wide range of subjects is essential for an efficient and effective library service. The aim of the children's libraries should be to see that children's needs for books for (a) information and (b) recreation are fully met. It is essential therefore to provide a wide selection of storybooks for home reading and non-fiction books for reference. The books must be suitable for the children's age and reading development so that they may find books that not only interest them but actually fascinate them.

It is important to ensure that the numbers of books in all non-fiction subjects are properly balanced. It is also important to see that the book fund is fairly distributed between non-fiction books and story books, the bulk of the

money should not be spent on story books just because these are in greater demand than non-fiction titles. Bias in book selection should be avoided. It is also to be kept in mind that the books chosen for a children's library should be representative of the best style of writing that exists.

However good the basic stock is, the library cannot maintain its efficiency or its appeal to its users unless the basic stock is extended by constantly adding current publications.

According to L.M. Harrod, the number of books for a basic stock cannot be pre-determined but a large children's library should contain about 2,000 different titles (not copies), a third being non-fiction and two-thirds fiction, all specially chosen for their good quality. The basic book collection should include picture books, for the very young, classics, modern favourites, folk and fairy tales and informational books. The age group for which most provision will need to be made is the 8-11 group, as it is from children of these ages that most of the members will come. In addition to lending library books, up to about 900 reference books are also needed, the number depending on the size of the library. These would include primarily dictionaries, encyclopaedias, biographical dictionaries, yearbooks, etc. giving all kinds of information about different countries and about the world as a whole. A good reference collection is necessary to help children answer questions, stemming both from their school assignments and from their own active curiosity.

Periodicals : It is advisable to have in every children's library a small selection of periodicals which are specially published for children. Today's library also collect micro-computer with suitable softwares, educational C.D.s, V.C.Ds, filmstrips, audio and video tape recordings, toys, maps, globes, and other relevant items to form a total collection of contemporary information.

Extension Work

Extension work is the name given to cover all kinds of activities carried out either inside or outside a library building to further the aims and objectives of the library. Any activity which is intended to result in greater use of the library comes under this heading.

In many libraries, story hours, puppet shows, stamp clubs, film shows, lectures or rather 'talks' for children on a variety of subjects, debates and discussions, handicraft groups, dramatic performances, and similar activities are organized to help keep the children in touch with the library. All these activities should be directed towards the use of books, and a direct link should be made between these activities and the borrowing of books from the library.

Story hours : The oldest, and most often practiced form of extension work. The purpose of story hours is primarily to interest children, particularly those under 8 years of age, in good stories and good literature. If story hours are popular they can be held for children of different age groups. Stories must be chosen to suit the age group and should stimulate children to read books, either those by the author whose story has been told, or similar ones by other authors.

Picture book time : A variation of the story hour is picture book time. This caters for children who are generally too young to read but are able to appreciate picture books.

Book Weeks : One of the most rewarding methods of introducing children to books is to organize Book Weeks. Talks are given by authors and illustrators or publishers of children's books or by sportsmen (also eminent personalities) with a view to drawing attention to books and the part they play in the life of a child. These are supplemented by attractively displayed and colourful exhibitions of books from the library or publishers. Visitors must be able to handle the books.

Objectives of Children's Library

The same general philosophy is shared in all children's libraries : the recognition of the child as an individual human being with the right to read and use all types of materials according to his interests and learning needs, thus enhancing the intellectual welfare of the children.

In her Library Service For Children first published in 1929 as part of a Library Curriculum Studies Series, Miss Effie Louise Power defined the immediate purpose of the children's library to be "to provide children with good books, supplemented by an inviting library environment and intelligent and sympathetic service and by these means to inspire and cultivate in children love of reading, discriminating taste in literature and judgment and skill in the use of books as tools."

Need for Children's Library

No one will oppose the idea of having children's library but few of us truly realize its far-reaching importance for a developed society. The reason is that books as such are never given priority over other basic needs. Besides this, a small section of our society has the privilege of availing the services of a good children's library. The benefits of the same to children of the community are as apparent as the fulfillment of compelling needs of society like food, clothing etc. Some of the direct benefits of providing library service to children are :

1. Through children's libraries, children develop the habit of going to libraries and using their resources at their habit-forming age, which pays good dividend in choosing their careers, professions and vocations.
2. Children should develop the habit of seeking truth for themselves. This could be possible only by reading appropriate books, which can be had in libraries.
3. Through library books the general knowledge of a child increases immensely and his/her horizon of knowledge widens a lot.
4. Extension services offered by the libraries from time to time like debates, discussions and lectures on books, quiz competitions, etc inculcate in children the art of public speaking expressing their views clearly to others.
5. Children's libraries help to supplement and support classroom teaching.

During school hours children may be taken to libraries and under the guidance of the librarian and teacher, children can find facts for themselves as well as collect information available in library books on topics covered in classroom teaching.

Toronto Public Library

In any discussion on children's library, it is worthwhile to study the development of children's library services in the Toronto Public Library which is considered as a pioneer institution providing organized library service to children.

The Toronto Public Library (TPL) officially opened on 6 March, 1884 on the 50th anniversary of the city of Toronto, following the passage of the Ontario Fleet Libraries Act in 1882. The second Chief Librarian, George H. Locke (tenure 1908-37) invited Lillian Helena Smith to establish library service for children. In 1922 TPL acquired a 19th century house next door to the Central Library, which Smith recreated as the first separately housed children's library in the British Commonwealth. Boys and Girls House included a story room, a high school collection and a sample collection for parents and professionals.

Smith has established storytelling programs which were attended by 15,000 children in 1916. Storytelling continued to be an important aspect of library programming, and in 1961 the first John Masefield Story-Telling Festival was held at Boys and Girls House. Annual Reports from the 1910s and 1920s stress the overcrowding and heavy use of children's libraries across the system, and in 1932 children's book circulation figures passed one million.

In 1949 the English Librarian Edgar Osborne gave his collection of early English children's books to TPL. Two collections have since been added : the Lillian H. Smith collection of outstanding children's books in English since 1911 and the Canadian collection of Canadian children's books. Today, the Osborne collection is ranked among the very best early children's book collections internationally.

Children's Library Services In China and Japan

As a matter of interest, development of children's library services in two major countries of Asia are discussed hereunder :

China : There are more than 1700 children libraries in China, among them, 70 public children's libraries set up independently, including 5 libraries at the provincial and municipal levels, 44 libraries at the prefectural and city levels, 21 libraries at the district and county levels. Most of them are distributed over the developed economy regions of the East and the Southeast, and the numbers are less in the Northwest and the Southwest. There are 53 libraries in the East and the Southeast regions, accounting for 75.7% of the total and 17 libraries in the Northwest and the Southwest regions, accounting for 24.3% of the total.

According to the statistics, the building areas of the provincial libraries are mentioned :

- Beijing Children's Library : 250 square meters,

- Shanghai Children's Library : 1592 square meters,
- Children's Library in Guangxi Zhuang Autonomous Regions : 2000 square meters,
- Tianjin Children's Library : 3550 square meters,
- Children's Library in Hunan Province : 12000 square meters.

The total collection in 21 children's libraries in China is about 716851 volumes, among it, one with the collection of more than one hundred thousand volumes, accounting for 5% of the total collection; 4 with the collection of 50 thousand volumes, accounting for 14%, 9 with the collection of 10 thousand or 5 thousand volumes, accounting for about 45%. The collection of Hongshan District Children's Library in Chifeng City of Nei Monggol is up to 106909 volumes. The rate of collection in the library is tending to rise because the responsible department has allocated more funds for acquisition of books and periodicals.

The state has allocated quite a lot of funds for children's libraries in recent years. All these funds were used to buy modern equipment like audio-visual system and computers for children's libraries. With these, the level of modernization of services in these children's libraries has been improved.

Japan : *The National Diet Library of Japan* (NDL) was established under the National Diet Library Law enacted in February 1948 by the Japanese Diet (Parliament). The NDL was opened in June 1948 with the Akasaka Detached Palace as its base. *International Library of Children's Literature* : Services for children at the NDL have evolved since its inception. From July 1948 to March 1950 there was a reading room for children aged 10 to 14 years old. After that period persons 20 years of age or older were permitted to use all library materials. The concern that Japanese children had come to spend less and less time reading led to wide support for the creation of the *International Library of Children's Literature* (ILCL). The Ueno building was remodeled for its new purpose in two stages. Phase I was completed in May 2000 and opened one-third of the facility to the public. The entire renovation was completed in 2002, at which point the ILCL started providing full service as the national centre of children's literature and related materials.

Out Commitment Towards Development of Children's Library Services

India's abiding interest in the all round development of children is reflected in Articles 24, 39 and 45 of India's constitution. In support of this the Government of India adopted the National Policy for Children in the year 1972, which provides a focus and a framework to evolve programmes and follow up action for the development of children. As per the Constitution, the Government has the obligation to provide compulsory education for all children until they complete the age of 14 years. To fulfill this statutory obligation, there must be well knit educational system backed by a network of libraries.

At present there are libraries in almost all cities in India which provide library service to children. In Kolkata also, many of the public libraries (both sponsored by the Government and non-sponsored) established through out the

20th century have opened children's sections. Separate children's libraries have also been established.

Given below are names of some well recognised libraries, which are providing services to children.

Name of Libraries	Estd.	Category
Bidhan Shishu Udyan Granthagar	1976	Purely children's library
Boy's Own Library and Young Men's Institute	1909	Children's division
British Council	2003 (Young Learners' Zone)	Children's section
Calcutta Metropolitan Library	1980	Children's section
Chetla Nityananda Library (Children's service: 1990)	1910	Children's service from same premise
Lion Children's International Library	1983	Purely children's library
Mahatma Aswini Dutta Children's Library	1981	Purely children's Library
The National Library (Children's section started in 1960)	1903	Children's section
Nitish Chandra Laharri Children's Library	1972	Purely children's library
The Ramakrishna Mission Institute of Culture, Golpark	1960	Children's section
Ramaprasad Children's Library	1986	Children's section
Rammohun Library	1904	Children's section
Sougata Smriti Granthagar	1985	Purely children's library
Sri Aurobindo Bhavan Children's Library	1980	Children's section
Vivekananda Society	1902	Children's section

Conclusion

A country's progress and development depends on how its citizens are educated and kept abreast of progress in science and arts and socio-political matters. This is more so in a democratic country. Democracy becomes truly fruitful in a country if the citizens are mostly educated and intelligent enough to differentiate between good and bad.

Here comes the important role of children's library. The children of present days are the citizens of tomorrow. Educationists of modern times are of the opinion that child development should mean total or complete development of the child and not limited to narrow mental development. This all round development cannot be achieved within the four-walls of the classrooms. In progressive countries, more importance is given nowadays on extension of knowledge than on acquiring education based on syllabus only.

The Children's libraries are a step towards fulfilling this modern trend in education. A children's library is intended as an auxiliary educational institution. It serves the social purpose of providing easy opportunity for self education. An ideal children's library offers to the children the opportunity to keep in touch with their time, to educate themselves continuously and keep abreast of progress in science and arts.

In view of the overwhelming importance of children's library which have been outlined above, the subject matter requires thorough study to find out the present position with a view to find ways and means for its allround development. Since, much work in this direction is yet to be done, a continuous all round effort is very much needed.

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10. YOUNG (Heartsill). The ALA Glossary of Library and Information Science. Chicago: American Library Association, 1983.

Abstract :

This article is based on my Dissertation work submitted for M.Phil course in LIS of the University of Calcutta. Wide reading of good books is Indispensable for the all round development of a child. The only medium through which right type of books can be possibly supplied to each and every child of the society without distinction of social status or economic condition is a Public Library. The views of Authoritative Bodies on Importance of providing library service to children and contributions of some eminent Librarians in this regard have been discussed. In this article, the need and importance of having children's library have been asserted. Mention has been made in details of several aspects of library services like types of services, collection of books and extension work. Development in some other countries in this regard has also been traced. Finally, names of some reputed libraries (both sponsored by the Government and non-sponsored) providing service to children in the city of Kolkata have been mentioned.

BENARAS HINDU UNIVERSITY LIBRARY SYSTEM AT A GLANCE

TRIDIB CHATTOPADHYAY, ABHIJIT CHAKRABARTI,
RAHUL MAJUMDAR, SANAT KUMAR BISWAS,
BIDHAN CHANDRA ROY, PHOOLRANI CHAKRABARTI*

Introduction :

Benaras Hindu University (BHU) is one of the oldest universities in India. It is now a central university. BHU has a large beautiful campus. The library of this university is also an important library in our country. Dr. S. R. Ranganathan, the father of library science in India, was the librarian of BHU. He started Colon Classification (CC) at the library of the university. The internal structure of the library building is like the British Museum Library. A brief description of the library system of BHU is available in this article.¹

1. B.H.U. Library System:

The Benaras Hindu University library system consists of the Central Library at the apex, three Institute Libraries, namely, Institute of Agricultural Sciences, Institute of Technology, and Institute of Medical Sciences, 8 Faculty Libraries, 25 Departmental Libraries, and six study centres in the city.

The system presently has over 13 lakh Books, 1360 Current journals, 9393 Doctoral Dissertations, 10433 Manuscripts and Internet facility in IMS Library, IT Main Library and Central Library.

1.1 Central Library (Sayaji Rao Gaekwad Library)

The Library Germinated from the Telang Library at the Central Hindu School, Kamachha, in 1916, shifted to Faculty of Arts (then Central Hindu College) in 1921 and thereafter to the present premises built with a donation of Rs. 2.00 lakh from Maharaja Sayaji Rao Gaekwad of Baroda, in 1941.

It has been nurtured by eminent historian, Sir Jadunath Sarkar, and then nourished and developed by Dr. S. R. Ranganathan (Padmashree), Dr. J. S. Sharma, Prof. P. N. Kaula (Padmashree), Sri H. D. Sharma, amongst others.

The library grew in size quickly not through only purchase of books and journals but also through munificent donations from Nehru family, Tagore family, Lala Sri Ram, Kanji Mulji, S. C. Bagchi, Dr. Bhagwandas, S. N. Das Gupta, B. N. Sharma, R. M. Goenka, A. Choudhary.

2. The Central Library has a collection of (as on 31.03.2005 approx.):

Books & Bound Vols. Journals	: 9,98,031.
Current Journals	: 1360
Ph. D Theses	: 9393
Manuscripts	: 7201

* M. Phil students (2004-05), DLIS, C.U.

2.1 It also has special collection of :

- UN & Govt. Publications
- Staff Publications
- Rare & Out of Print Books
- Local History
- University & its Founder.

2.2 Library timings :

- For 359 days in a year:
- 9.00 AM to 8.00 PM on weekdays: and
- 10.30 AM to 5.00 PM on Sundays and Holidays.

3. Layout of different sections

As one enters the lobby on the left is the Property Counter. In the lobby there is a Registration Window, where new members get themselves registered. There is another window in the lobby where books are returned.

As the main portal is crossed there is a magnificent circular hall built on the pattern of British Museum, London. It accommodates the Issue Counter, Card catalogue, Reference Collection and the Readers Advisor's Desk.

The sections on ground floor are :

1. Text Books
2. Theses and Rare Books
3. Manuscripts
4. Photocopying
5. Internet Section
6. Computer Division
7. Books Stack

The sections on the first floor are:

1. Newspaper/Magazine Section
2. U. N. & Government Publication Section
3. Book Purchase (Acquisition) Section
4. Technical Section for Indian language books.

The Sections located in the annexe building:

1. Current Periodical Section
2. Periodical Stacks
3. Technical Section.

3.01 Textbook Section

A Textbook Section has been created in the Central Library. Two copies of every textbook are kept in this section. Books are not issued out from here. This section has about 40,000 books.

It is open from 9.00 A.M. to 8.00 P.M. on weekdays and from 10.30 A.M. to 5.00 P.M. on holidays.

3.02 Periodical Section

The Library has good collection of periodicals in various subject fields. It presently subscribes 1318 periodicals. Periodicals in the subject fields of medical sciences, engineering and technology, law, education, botany, physics, chemistry are available in the concerned Institute/Faculty/Departmental Libraries.

Periodical Section of the Central Library is located in annexe building. Loose issues of periodicals are displayed and stored in the specially designed racks for the purpose. The back volumes of periodicals are shelved in the stack area of the annexe building. There are separate reading areas for loose and bound volumes.

3.03 Circulation Section

This is the Section where readers get registered as members of the Library. Only members have the privilege of borrowing the books for home use.

To become a member a student has to produce the admission fee receipt of the current session and the latest Identity Card. Students get as many reader's ticket as they are entitled to borrow books. Against one reader's ticket one book is issued. To become a member, teachers and other employees of the university have to fill a form and get it forwarded by the Head of the Department. Teachers and employees get a passbook for getting books issued.

The circulation counter functions from 11.00 A.M. to 4.30 P.M. on weekdays and remains closed on Sundays and holidays.

The books are issued for a month. The no. of volumes to be issued at a time are:

Under Graduates	:	2 books
Post Graduates	:	4 books
Research Scholars	:	6 books
Lecturers	:	10 books
Readers	:	15 books
Professors	:	20 books

3.04 Reference Section

Reference Section is located in the Circular Hall. Around the walls are glass panel of almirahs where important reference books are shelved. Reference books are those books language dictionaries, encyclopaedias, directories, year-books, handbooks, geographical and biographical dictionaries, bibliographies. This library has one of the best reference collections in the country.

3.05 Thesis Section

Copy of the thesis approved for Ph.D and D.Litt in the Banaras Hindu University

is kept in the Thesis Section. Over nine thousand thesis are there in the Section. A separate catalogue by author, title, subject has been provided in front of the section. The computerized catalog is also available in this section.

3.06 Rare Book Section

Rare books make a library unique and valuable. It has some 14000 rare books – some of them published in the 17th and 18th centuries.

3.07 Manuscript Section

The University has a fairly large collection of Sanskrit and Persian manuscripts. Besides the Central Library these manuscripts are also kept in the Bharat Kala Bhavan and the Faculty of Oriental Learning and Theology. Sanskrit manuscripts number 10,433 out of which 5695 are in the Central Library, 4520 in the Bharat Kala Bhavan and 218 in the Faculty of Oriental Learning and Theology. These are in several scripts including Sarda (Old Kashmiri), Grantha (Tamil Script), Devanagari, Telugu and Bengali. Some of the manuscripts are on Palm leaf, bhojpatra, bamboo and the rest are on paper.

3.08 Reprographic Section

The Reprographic Section of the Library is equipped with four photocopying machines. Photocopy of periodical articles and parts of books are made available to the readers at a nominal rate of 50 paise per exposure. The Xerox booking start at 11.00 am from reference counter.

Back files of four Indian newspaper (Leader 1909-1950, National Herald 1938-1960, Hindustan Times 1924-1965, Amrit Bazar Patrika 1905-1940) are available in the Library on microfilm. There is Microfilm Reader for reading these microfilms.

3.09 Internet Section

Internet connectivity with 12 nodes has been provided for the use of teachers, researcher and undergraduate and postgraduate students of the university for browsing of websites and databases, of their interest. This can be used for sending messages/informations also. A nominal charge of Rs.10.00 per hour is levied. Printouts of downloaded data is also provided @ Re. 1.00 per page.

3.10 U.N. & Government Section

This library has one of the largest collection of the United Nations and its agency publications, as it is one of the four depository libraries in the country. These publications are specially valuable for research scholars as they give the latest developments in economic, social, political and educational spheres in the world.

This section also has government publications. Emphasis is on Central Government and Uttar Pradesh Government publications. Important government publication is purchased. The total no. of documents in this collection is over eighteen thousand presently.

4. The library provides various facilities for its users. The user community of the library consists of teachers, students, research scholars and others. The Current

Awareness Service (CAS), Selective Dissemination of Information (SDI), Reference Service, Internet facility etc. all types of services are remarkable.

4.1 Textbook Facilities

As higher education in this country is still textbook oriented, there is a great demand for textbooks. Efforts have been made to meet this increasing demand for textbooks.

4.2 Document Delivery Service

To fulfill the information needs of the user through information/document supply is a document delivery service. BHU library is a document delivery centre of INFLIBNET for supply of documents to the faculty and researchers of MP, UP, Bihar and North East states.

4.3 DELNET Service

BHU Library is a part of UGC-INFONET and INDEST Consortia for e-journals subscription. BHU is having access to above 4000 online journals and databases. It includes publications of American Chemical Society, Royal Society of Chemistry, Nature, Science, Science Direct (Elsevier), Project Muse (Social Science & Humanities), Emerald, Institute of Physics, Am. Instt. of Physics, Am. Physical Society (AIP/APS), Cambridge University Press, Springer, Kluwer online publications, etc. BHU is having access to databases like Chemical Abstracts and Biological Abstracts. The access is available to all users through campus network of BHU. For details visit <http://www.bhu.ac.in/bhulibrary/journal.htm>.

4.4 Electronic Database & Online Journals

BHU Library is a part of UGC-INFONET and INDEST Consortia for e-journals subscription. BHU is having access to above 4000 online journals and databases. It includes publications of American Chemical Society, Royal Society of Chemistry, Nature, Science, Science Direct (Elsevier), Project Muse (Social Science & Humanities), Emerald, Institute of Physics. Am. Instt. of Physics. Am. Physical Society (AIP/APS), Cambridge University Press, Springer, Kluwer online publications, etc. BHU is having access to databases like Chemical Abstracts and Biological Abstracts. The access is available to all users through campus network of BHU. For details visit <http://www.bhu.ac.in/bhulibrary/journal.htm>.

4.5 The Library Provides study facility through lending for home study (for members), Lending to Departmental Libraries, Six Study Centres in the city besides inside consultation and study facilities.

4.6 It also provides information Services, like:

- Reprographic service @ 50 paise per exposure.
- Internet facility @ Rs. 10.00 per hour.
- Free Internet facility for online access to Journals.
- Free CD writer facility for downloaded data.

- Printout of downloaded data @ Re. 1.00 per page.
- Database search through DELNET, INFLIBNET.
- Online access to select Journals.
- Inter-Library Loan through Electronic Document Delivery or other means.

5. Modernisation Activity

The Library is undergoing though the process of computerization. The catalogue of these collection has already been computerized. Besides this record of over 44,000 books and over 1550 periodicals with full holdings have also been put on the computer by now. The networking within the library completed. Computerisation of operations like purchasing and cataloguing of books and subscription record of current journals are underway. At a later stage the computerization of other libraries of the university are proposed to be taken. Finally, all the libraries of the university will be linked through the campus network and will be accessed from any department, laboratory, hostel, etc.

6. Study Centres

To meet the needs of the day scholars residing in the city, six Study Centres are located at Kamachha, Chetganj, Godowlia, Machhadari Park, Ram Nagar and D L W campus. Textbooks, magazines and newspapers are available in all these Centres. No borrowing facility is available at these centres.

7. Catalogue Card & Classification System

This library uses Colon Classification. While bulk of the books are arranged by Colon numbers, some old books are arranged by Dewey Decimal Classification. There is no difficulty in knowing the number, as the Catalogue Cards are arranged in one sequence which indicates which number is used for a particular book.

7.1 Open Access System

Books are arranged according to the subject content of each book. Each book is given a number known as the Call Number. This number is written on the spine of each book and is also written on the corresponding cards in the Card Catalogue.

Catalogue is the key to the library collections. Before going to the shelves it is advisable to consult the catalogue to know a particular book is available in the library or not, and if it available then one should note down the Call Number written by pencil on the Catalogue Card. After noting the Call Number the readers are advised to go to the stacks for getting the particular book.

The library system of the BHU is a beautiful one. This library system plays an important role in the field of educational Information dissemination of our country. It carries the educational and cultural heritage of our country. After all, this library system is the role model and it is one of the futuristic library system of India. It will generate great thinkers, policy makers, social scientists, scientists, technologists etc., at least we can hope that.

We deeply acknowledge the names of the following persons who helped us very much.

1. Prof. (Dr.) H. N. Prasad, Professor-in-charge, Library System; BHU, & Head, DLIS, BHU.
2. Dr. Aditya Tripathi, Lecturer, DLIS, BHU.
3. All the Deputy Librarians, Assistant Librarians and the Staff members of the BHU Library System.
4. Dr. Biplab Chakrabarti, Reader and Coordinator, M.Phil Couse of the Department of Library and Information Science, University of Calcutta.

Reference :

1. Know Your Library: BHU-LIBRARY and its INFORMATION RESOURCES. Central Library, Benaras Hindu University (BHU), Varanasi.

Abstract : This article describes the present state of the Benaras Hindu University Library system. The varlous sections of the library ls described here in a very lucid manner. The activities of the different departments of the library are discussed in this article vividly and clearly.

APPLICATIONS OF ONTOLOGY IN WEB-BASED INFORMATION SYSTEM

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Introduction:

Strategies in recent years knowledge organisation systems such as ontologies have emerged as promising developments in the areas of knowledge representation, natural language processing information retrieval, knowledge discovery and semantic web activities. The primary objective of this development has been oriented towards developing effective and efficient information based knowledge management systems. The ability of ontology to combine together two different tasks of 'information retrieval' and 'knowledge discovery' bestows a prominent place of these tools in digital libraries. The term 'ontology' coined as early as seventeenth century, fundamentally belong to the field of Philosophy, owing its essence to 'metaphysics' primarily concerned with enquiry into existence of being (Heideger 1999). At present ontology is being suggested as a mechanism for denoting the existence of a document on the world wide web.

1. What Is an Ontology

In Computer Science, an ontology is a data model that represents a domain and is used to reason about the objects in that domain and the relations between them. Ontologies are used in artificial intelligence, the semantic web, software engineering and information architecture as form of knowledge representation about the world or some part of it.

- (a) The Concept has been derived from Philosophy (Plato & Aristotle) and is being suggested as a mechanism for denoting the existence of a document on www.
- (b) It is the study of what exists in a system and what we must assume to exist in order to achieve a cogent description of reality or dealing with the nature of reality.
- (c) Ontology as a particular system of categories accounting for a certain vision of the world.
- (d) Ontology is a fascinating discipline. Ontology is claimed to be 'an explicit specification of conceptualization', 'a theory of content', 'a theory (a system) of concepts/vocabulary used as building blocks of information processing systems', 'a set of agreements about a set of concepts', or 'the representation of semantics of terms and their relationships'.
- (e) Ontology can be treated as conceptual patterns', 'concept hierarchies',

* Senior Lecturer.

'a body of conceptualizations', 'schemata', or 'metadata scheme', 'a common set of terms', 'a controlled vocabulary of terms', 'a representation vocabulary', or 'a body of knowledge'.

- (f) Formal explicit description of a concept is called ontology as propounded by traditional philosopher.
- (g) Explicit specification of conceptualisation.
- (h) The word really means the branch of metaphysics that deals with the nature of reality or being. Therefore, it is used as a fancy word for "What exists" in a system.
- (i) A theory concerning the kinds of entities and specifically the kinds of abstract entities and specifically the kinds of abstract entities that are to be admitted to a language system."

2. What are the differences between a vocabulary, a taxonomy, a thesaurus, an ontology and meta model ?

A **Controlled vocabulary** is a list of terms that have been enumerated explicitly. This list is controlled by and is available from a controlled vocabulary registration authority. All terms in a controlled vocabulary should have an unambiguous, non-redundant definition – This is a design goal that may not be true in practice. It depends on how strict the controlled vocabulary registration authority is regarding registration of terms in controlled vocabulary.

A **Taxonomy** is a collection of controlled vocabulary terms organised into hierarchical structure. Each term in a taxonomy is in one or more parent-child relationships to other terms in the taxonomy. There may be different types of parent – child relationships in a taxonomy (e.g., Whole – part, genus-species, type-instance) but good practice limits all parent-child relationships to a single parent to be at of the same type.

A **Thesaurus** is a networked collection of controlled vocabulary terms. This means that a thesaurus uses associative relationships in addition to parent-child relationship.

People use the word ontology to mean different things, e.g. glossaries & data dictionaries, thesauri & taxonomies, schemas & data models and formal ontologies and inference. A formal ontology is a controlled vocabulary expressed in an ontology representation language. This language has a grammar for using vocabulary terms to express something meaningful within a specified domain of interest. People make commitments to use a specific controlled vocabulary or ontology for a domain of interest.

A **Meta model** is a explicit model of the constructs and rules needed to build specific models within a domain of interest. A meta model can be viewed from three different perspectives:

- (a) as a set of building blocks and rules used to build models
- (b) as a model of a domain of interest and
- (c) as an instance of another model.

3. Types

(a) **Ontology in philosophy versus ontology in computing**

This is different from - but related to - the philosophical meaning of the word Ontology, the study of existence. The purpose of a computational ontology is not to specify what does or does not 'exist', but to create a conceptualisation of the concepts and relationships in the area of interest to the ontologist.

(b) **Domain ontology versus foundation ontology (upper ontology)**

A domain ontology is an ontology tied to a specific domain. A foundation ontology is a form of ontology that tries to be less specific, and in that way more generally applicable.

(c) **Strong versus weak ontologies**

Ontologies have a strength or weakness depending on the ability of a computer to comprehend them.

4. Concept and Theory

The reference back to Newell occurred frequently in discussions of ontology in knowledge engineering. In a presidential address to the American Association of Artificial Intelligence, he considered Computer system level, e.g. currents and voltages at the circuit level changing to bits at the logic level to data structures (variables, arrays, etc.) as being higher structures at the symbol level. Above them was a knowledge level, comprising the conceptual knowledge that was embodied in the representations. The same is evident in Ranganathan's distinction between the 'idea' level (corresponding to Newell's knowledge level) and the 'verbal' level (The verbal expression of a concept). Finally concept of ontology emerged from different disciplines of study and it was concluded that the study of reality, can benefit to the knowledge constructions process in yielding high-value knowledge bases.

Uschold writes that an ontology is often conceived as a set of concepts

- (a) Entities
- (b) Attributes
- (c) Process

An ontology may take a variety of forms, but will necessarily include a vocabulary of terms and some specifications of their meaning (i.e definitions). It may be : high informal expressed in natural language, semi-formal, expressed in a restricted and structured form of natural language.

Semi-informal-expressed in an artificial formally defined language

Rigorously formal, with meticulously defined terms with formal semantics and theorems.

5. Ontologies : Applications

5.1 **Web portal**—Web Portals are web sites that connect information on specific topic.

- 5.2 **Multimedia collection**—ontologies are observed to provide semantic annotations for collections of images audio and other textual objects.
- 5.3 **Corporate website management**—ontologies can be effectively utilized for indexing corporate web document and provide better services.
- 5.4 **Design Documentation**—Design documentation relates to a large body of engineering documentation such as aerospace industry.
- 5.5 **Intelligent Agents**—Intelligent agents are systems that are capable of understanding and integrating diverse information resources.
- 5.6 **Ubiquitous Computing**—Ubiquitous computing is a newly emerging area in personal Computing, characterised by the shift from dedicated computer machinery to pervasive computing capabilities embeded in our everyday activities.

6. Application in Primary Areas

- Natural language understanding and generation
- Semantic database design
- Data mining
- Semantic information retrieval
- Knowledge sharing groups working independently
- Building and utilizing user models
- Ontology-constrained simulation

7. Ontology Languages

An ontology language is a formal language used to encode the ontology. There are a number of such languages for ontologies, both propriety and standard based :

- a) OWL is a language for making ontological statements
- b) KIF is a syntax for first order logic
- c) The CYC Project has its own ontology language called CYCL, based on first-order predicate calculus with some higher order extensions.

8. Examples of Ontologies

- a) Plant ontology for Plant structure
- b) Open Biomedical ontology
- c) Global Justice XML data model
- d) National Information Exchange Model
- e) Suggested super Merged ontology
- f) USECS universal standard entity classification system
- g) Cyc for formal representation of the universe of discourse.
- h) GOLD (General Ontology for Linguistic Description)
- i) Word Net Lexical reference system
- j) Gene Ontology for genomics

- k) Descriptive ontology for linguistic and cognitive Engineering
- l) Basic formal ontology
- m) General formal ontology
- n) Description and situations.

9. Building Ontologies

- The domain to be covered by the ontology must first be decided, and a specification document may be drawn up.
- Concept terms are collected by scanning the literature of the domain, and by consulting domain experts.
- Collected terms may then be grouped
- Next step is of producing definitions. Here the idea of meta ontology is useful. Meta ontology is a statement of the categories of term required in the ontology.

10. Basic Principles of Ontological Engineering

- (a) There is no unique ontology of the world. They are not natural entities to be discovered, they are artifacts.
- (b) An ontology is always built for a specific task. The type of knowledge that ontology contains differ from task to task.
- (c) It must be easy to browse the ontology to find the right concept.
- (d) It must be possible to add new concepts.
- (e) The classification of concepts in an ontology is necessarily redundant.
- (f) Fine-gained decomposition of Concepts is the basic element for building a precise ontology where each concept is clearly distinguishable from others.

11. Elements of an Ontology

- a) **Individuals (Instances)** — Individuals are the basic "ground level" components of an ontology. The individuals in an ontology may include concrete objects such as people, animals, tables, automobiles, molecules and planet as well as abstract individuals such as number's and words.
- b) **Classes (Concepts)** — Classes are abstract groups, sets, or collections of objects. They may contain individuals other classes or a combination of both. Some examples of class :
 - Person the class of the people
 - Molecule the class of all molecules
 - Number the class of all numbers
 - Vehicle the class of all vehicles
 - Car the class fo all cars
 - Individual representing the class of all individuals
 - Class representing the class of all classes
 - Thing representing the class of all things.

- c) **Attributes** — Objects in the ontology can be described by assigning attributes to them. Each attribute has at least a name and a value and is used to store information that is specific to object it is attached to. For example the Ford Explorer object has attributes such as :
 - Name : Ford Explorer
 - Number – of – Doors : 4
 - Engine : (4.0L, 4.6L)
 - Transmission : 6-speed
- d) **Relationships** — An important use of attributes to be described the relationships object in the ontology. Typically a relation is an attribute whose value is another object in the ontology.

12. Applications In Digital Libraries

System developed on ontological principle are observed to play an active role in digital libraries. The potential role played by ontologies in information management creates new vistas for effective utilization of ontologies in digital libraries, which are primarily repositories of electronic information. However, presently the metadata collections of electronic resources available in the digital library serve as points of access to these valuable resources. The current practice of information retrieval in digital libraries include search through special-purpose web portals specifically designed for the respective digital library, which acts as information gateway to the available contents in the digital library. Such portals acting as an interface between the user and the database performs the tedious task of searching, locating and presenting the required data to the user in acceptable form.

13. Conclusion

The theory of ontology can help in studying the reusable knowledge components and semantically marking up web pages using terms from an explicit ontology. This will not only improve retrieval but will help in integration of the data from many pages at the same time. New development of tools at the 'knowledge level' shows the growing understanding of the importance of semantic analysis in information processing. This could lead to solution to the problems with which information scientist have for so long been struggling. It is to be hoped that all involved will continue to learn from each other experience. The co-operative venture could lead to 'an open multifunctional and multilingual system for integrated access to knowledge about concepts and terminology'.

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Abstract : Present Paper attempts to highlight a brief overview about what is ontology, types of ontology, principles of ontology, different elements of ontology, ontological engineering, applications of ontology in web-based information system and digital libraries.

Keywords : Ontology, Semantics web, Controlled Vocabulary, taxonomy, thesaurus, meta model, Knowledge representation, ontology language, ontological Engineering, Digital Library.

INFORMATION MANAGEMENT IN THE LIBRARY OF PAILAN COLLEGE OF MANAGEMENT AND TECHNOLOGY

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1. Introduction

In attempting to discuss the subject of Information Management, it would be helpful to define and delimit the use of the terms and consider some of the resulting implications. This is especially because the meanings of term depend on the context in which they are used. Therefore, for any purposeful discussion that will ensure some degree of success, defining of terms becomes desirable, if not essential.

1.1 Information

Some meaningful message recorded in conventional or non-conventional media and stored and processed by systems and services with a view to providing a more or less permanent memory of the message and their dissemination to users. BS 3527, Part-1, 1976 defines information as "the meaning that a human assigns to data by means of conventions used in their presentation".¹ In other words, information is data that has given shape. It may be considered as processed data. Thus, information is data plus the meaning, which has to be a result of human action.

An unconventional definition, however, states that information is

- What we take in from outside to feed our knowledge so that we can function successfully and achieve our aims.
- What is necessary and what is available in a given situation for this purpose.

1.2 Management

Management has been defined by the American Management Association as the guiding of human and physical resources into dynamic organization units that attain their objectives to the satisfaction of those served and with a high degree of morale and sense of attainment on the part of those rendering the service. Perhaps, a simpler definition would be "Getting results through people". Generally speaking, management would include planning, organizing, staffing, directing, coordinating, reporting and budgeting.....POSDCORB, for short. Marketing of course, forms part of managerial activities.

1.3 Information Management

While the terms 'Information' and 'Management' have been defined, there does

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not seem to be one view in regard to the couplet 'Information Management' both in academic and professional circles. Consequently, it has been described as chameleonic in character or nature or to be more charitable as McGee and Prusat (1996) put it Information Management (IM) is an emergent field of interest. Whatever it is, IM is one of the buzz terms of the present age of librarianship/information science/archives and record management. It is a term that has come to significance as a consequence of the greatly increased interest in Information Technology (IT).

According to Tom Wilson (1987), IM has no standard definition, but the basis of the idea can be found in one of Peter Drucker's works : "The systematic and purposeful acquisition of information and, its systematic and purposeful application are emerging as the new foundations for work, productivity and effort throughout the world".² Wilson then goes on to comment "That notion that the economics of the future world depend upon the 'purposeful acquisition' of information is at the root of the IM idea. Also at root is the idea that the systematic and purposeful application of information will depend increasingly upon the application of IT. Two ideas, therefore, come together in the concept of IM : information as an important economic resource and IT as a tool for its effective management."³

So we can say that IM covers the whole spectrum of information handling activities, technology and its role in information handling as well as various management activities practiced in institutions.

2. The Origins

Pailan College of Management and Technology (PCMT-a unit of Pailan Group) is an ISO 9001-2000 Certified Institute. A Rs. 16 crore project on a 10 acre site, offering six professional courses under the aegis of West Bengal University of Technology-the 2 year MBA, 3 year MCA, 3 year BCA, 3-year BBA, 3-year BHM (Hospital Management) and 4-year B Optm (Optometry) PCMT was inaugurated in September 2002 with a nationally outsourced and hand picked faculty that is now the envy of Eastern India. Major investments were also made to facilitate R&D work at the college. The college is approved by All India Council for Technical Education (Ministry of HRD, Government of India) and University of Cambridge-Local Examination Syndicate for Business English Certification courses, and has produced top-ranking students. The Library of PCMT has been established to meet the information requirements of the students and faculty members. The PCMT Library with its modern collection of knowledge resources and innovative information services is an integral part of the lives of students, faculty, staffs and the surrounding community of academicians in their intellectual pursuits.

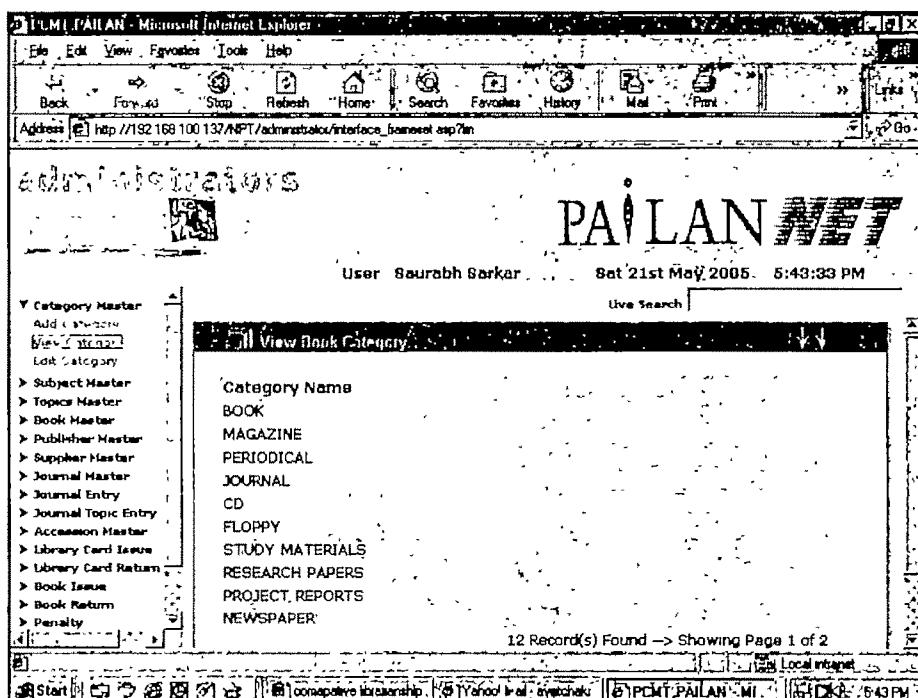
3. The Setting

It is a hybrid library with state-of-the-art technological applications. The resources of the Library are predominantly related to Management, IT and allied subjects. But this does not rule out its even share of books on general topics of interest. The entire Library collection including the CD-ROM databases and

the online databases is available through the institute network. Users can access the online databases and also find out the realtime availability of library materials from their own computer terminals. The Library strives to maintain the highest professional standards through the varied range of information services offered by them.

4. Resources

The library is an integral part of the study and research at PCMT. A need-based collection of knowledge resources is being developed in lines with the objectives and activities of the Institute in mind. Resources include books, journals, audio-visual materials, CD-ROMs, e-journals and online databases.



Category Name
BOOK
MAGAZINE
PERIODICAL
JOURNAL
CD
FLOPPY
STUDY MATERIALS
RESEARCH PAPERS
PROJECT REPORTS
NEWSPAPER

12 Record(s) Found --> Showing Page 1 of 2

Books : The Library has a highly selective collection of over 8,000 books in the area of management, technology and related subjects. Besides, there are also many new technical and reference books available in electronic form.

Journals : The Library subscribes to 36 print journals (2 Foreign and 34 Indian) specific to the academic and research needs of the academic community. Besides, there are about 226 e-journals published by renowned publishers like Elsevier Science, Blackwell, John Wiley, Sage, Taylor & Francis, ACM and Kluwer available in full-text through the online databases subscribed by the library.

Videos : Educational videos from BBC, Harvard, INSEAD, Standford Business School, etc. are available for consultation in the library.

CD-ROMs : The collection includes CDs on statistical data, encyclopedias, dictionaries, CBTs, etc. Most of the CDs are mounted on the CD-NET server and can be accessed through the Institute's network.

Other Resources : The library also holds a collection of case studies, working papers, class handouts, research papers, project reports, reprints etc., in the area of management, technology and related subjects.

5. Information Services

All the above offline and online resources (including the national and international databases) can be accessed by the academic community from the institute's Intranet. However, the role of the library is not just restricted to being a knowledge bank to the faculty and the participants. It also provides services such as :

- **Inter Library Loan/Resource Sharing** : Library has co-operative arrangements with British Council Library, Kolkata, Central Library of IIM, Calcutta and American Information Resource Center, Kolkata to get documents, which are not available in the IIMI Library. Faculty and researchers can avail this facility.
- **Proactive Information Services** : Library provides specific information services such as alert on upcoming conferences, CAS, SDI, etc. to the academic community.
- **Reference and Research Services** : Library staff also support the faculty and researchers in various ways like conducting extensive literature surveys, preparation of subject bibliographies on any given topic, reading lists, database searches, etc. Staff would also help the students with information resources in doing their projects as part of the course work, conducting case studies, etc.
- **Referral Services** : Subject teams along with Librarian; provide expert guidance on the vast range of resources available in the library including external databases and the internet. The teams offer guidance on the appropriate specialist collections, information centers and services available else where in India.

6. Tools and Techniques for IM

While the need for effective IM within an institution is not new, two major trends, however, have come together to create an unprecedented awareness of the importance of Information. Firstly, the growing complexity of organizational structures and operations, and secondly the impact of computing and communications technologies (collectively called IT) on work functions and patterns. Consequently, the managerial spotlight is now on information processing and information resources handling within the organizational framework (Lewis, 1985). The question then is not what IM but How IM? The answer lies in the

various tools and techniques available to the library and information profession, some of which are used in PCMT Library, are discussed below.

6.1 Information Technology

The field of librarianship and information science has undergone a sea change during the past three decades, due to the Impact of information technology on the generation, processing, storage, retrieval and dissemination /transmission of information. In addition, the advantages of IT which include: accommodation of increased workload, achievement of greater efficiency, ability for generation of new services, facilitating cooperation etc. can stand in good stead in the quest for quality and productivity of L&I sources (collection) and services. This newly introduced technology essentially based on electronics seems to be gradually replacing the conventional tools in information activities, as it is amenable to integration unlike the latter. The academic community of the college can also get every detail of the library resources as well as a host of other information from the Pailan Net System. This system was inaugurated by Sri Buddhadeb Bhattacharjee, Hon'ble Chief Minister of West Bengal, on 29 November 2003. This is an integrated software developed by Kalinga Software Preivate Ltd. From this system one can search list of documents available in the PCMT Library.

For Books user can access the database as given below :

The screenshot shows a web-based library management system. At the top, there is a browser-like header with tabs, a menu bar (File, Edit, View, Favorites, Tools, Help), and a toolbar with icons for Back, Forward, Stop, Refresh, Home, Search, Favorites, History, Mail, Print, and Links. The address bar shows the URL: <http://192.168.100.137/NPT/administrator/interface/index.asp?m>. Below the header, there is a navigation menu on the left with items like Category Master, Subject Master, Topic Master, Book Master, and others. The main content area has a title 'View Library Books' and a sub-header 'User : Sourabh Sarker Date 21st May 2005 5:40:32 PM'. It features a search bar with 'Live Search' and a table displaying library books. The table columns are Book Name, Subject, Volume, Edition, and Category. The data in the table is as follows:

Book Name	Subject	Volume	Edition	Category
Peter Norton's Introduction to computers	Computer Fundamentals	0	4	BOOK
Engineering mathematics	Mathematics	1	1	BOOK
Programming in ANSI C	C Language	1	1	BOOK
Programming with C	C Language	1	1	BOOK
Microsoft Office 2000	MS OFFICE	1	1	BOOK
Cambridge International English Language	English Language	1	12	BOOK
Dictionary of Phrasal Verbs				
Macroeconomics	Economics	1	8	BOOK
Better Vocabulary in 30 Days	English Language	1	1	BOOK

At the bottom, there are links for 'Start', 'Stop', 'Search', and 'Help', along with links to 'cooperative librarianship', 'Yahoo Mail search', 'PCMT PAILAN - M', and the date 'Saturday May 21, 2005'.

For Journals on can access :

Journal Name	Periodicity	Subscription Price	From Year	To Year
The Accounting World	Monthly	Rs/60	2003	2005
Advertising Express	Monthly	Rs/60	2003	2004
Business India	Monthly	Rs/100	2003	2004
Business World	Weekly	Rs/5	2003	2003
Case Foko	Monthly	Rs/60	2003	2004
Chartered Financial Analyst	Monthly	Rs/60	2003	2004
Data Quest	Monthly	Rs/25	2003	2004
Digit	Monthly	Rs/100	2003	2004
Developer 2.0	Monthly	Rs/100	2003	2004
EBusiness	Monthly	Rs/60	2003	2004

Library Staff add bibliography of documents and give accession number by using this software. This modification can be done only by the Library staff as it is password protected.

Information Management In the Library of Pallan College

Administrator - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Stop Refresh Home Search Favorites History Mail Print

Address http://192.168.100.37/WPT/Administrator/Welcome.htm?user=7&id=2

administrators

PAiLAN.NET

User: **Saumabh Berkar** Sat 23rd May 2005, 8:06:52 PM

Subject* Computer Volume* 0
 Fundamentals
 Topic* Computer Publication Year* 2001
 Page* 205 Price* 255
 Publisher Name Tata McGraw Hill
 Book Name* Peter Norton's Introduction to computers
 AUTHOR(S) Peter Norton

Accession No*

Bill No* Bill Date* 21-MAY-2005

Supplier* Choose Supplier Book Status* References

Accession Date* 21-MAY-2005 Shelf No*

Fields marked with (*) are Mandatory.

File Start Stop Refresh Home Search Favorites History Mail Print

New Journals can be added like below :

ULTRALAN - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Stop Refresh Home Search Favorites History Mail Print

Address: http://192.168.100.137/MP1/administrator/journal_new.asp?jno=

Administrator

PAILAN.NET

User: Sourabh Barkar Date: 21st May 2008 16:37:22 PM.

Add New Journal

Journal Name* Subscription Rs

Periodicity* From Year* To Year*

Fields marked with (*) are Mandatory.

Leave

Category Master
Subject Master
Topics Master
Books Master
Publisher Master
Supplier Master
Journal Master
All Journals
New Journals
Old Journals
Journal Entry
Journal Topic Entry
Accession Master
Library Card Issues
Library Card Returns
Book Issues
Book Returns
Penalty

Nevertheless, integration has not been achievable in many cases due to incompatibilities in system hardware and software design and associated standards. At this juncture, perhaps, a listing of advances/key technologies which the market has identified as the necessary foundations on which to build an information revolution will be in order for comprehensive treatment of the

application of IT for various library house keeping operations, acquisitions, classification, cataloguing, circulation, stock taking, serials control etc.

6.2 Standards

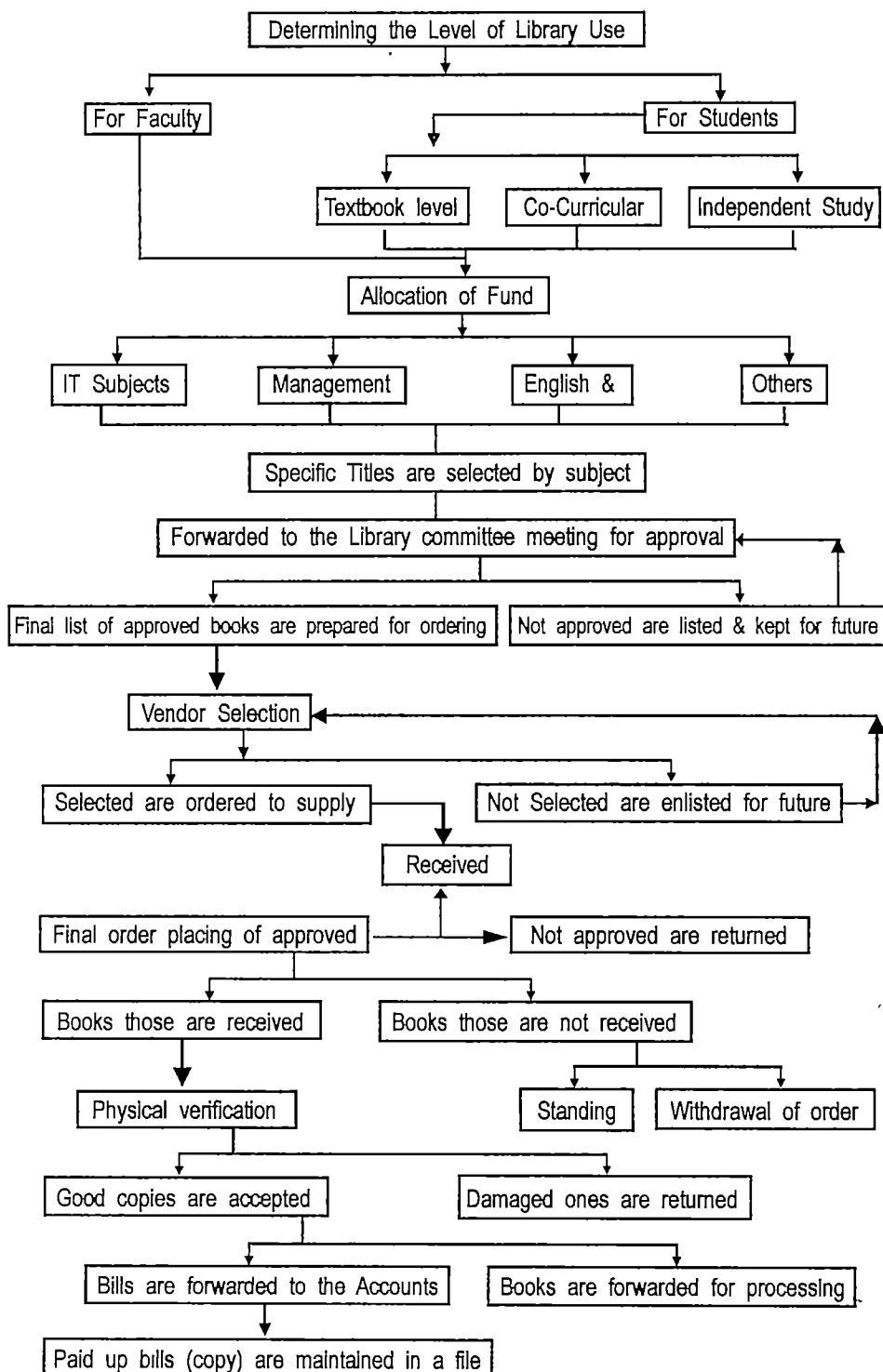
Standards may be considered as important tools in IM. For example, Indian Standards Institution (now called Bureau of Indian Standards) have developed and published a number of Indian standards for documentation pertaining to bibliographical references, book binding, books and periodicals, cataloguing, classification, library and archives building, furniture, lighting, microfilms, proof corrections, typography etc. In addition, a number of institutions and individuals have formulated library standards, both official and non-official, useful in the planning and management of libraries and information centers. PCMT Library follows the ISO 9001-2000.

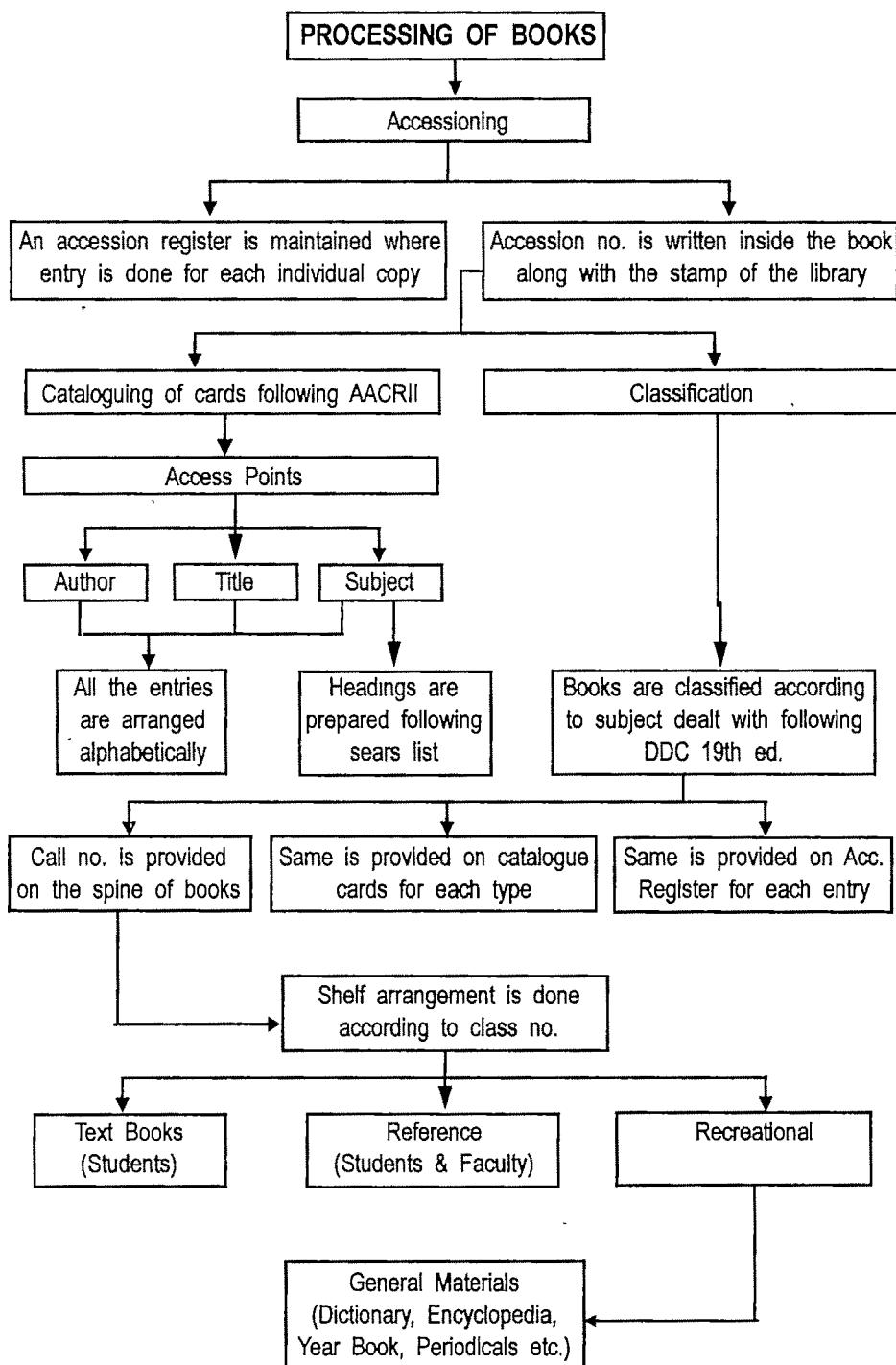
6.3 Work Analysis Techniques

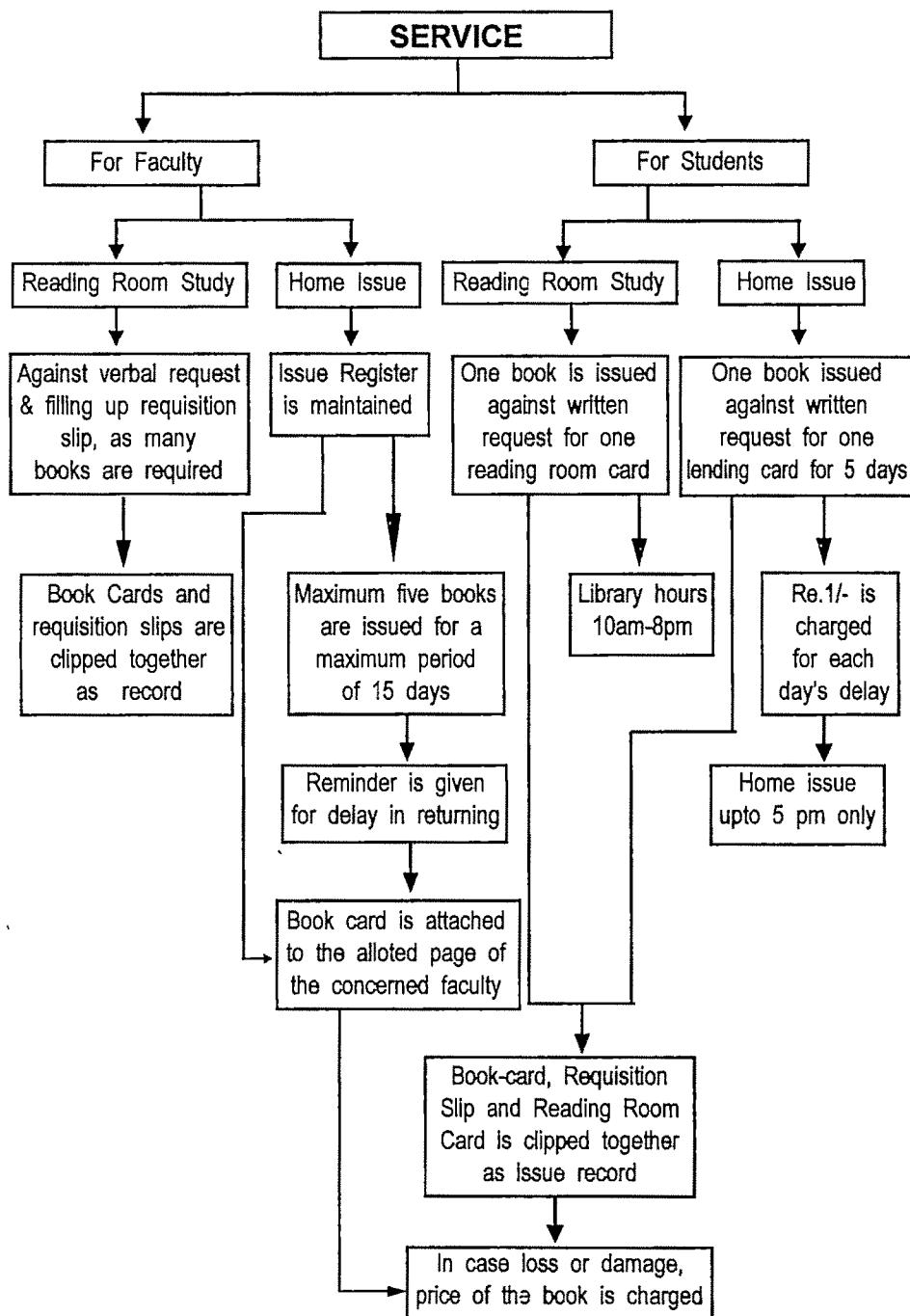
In managerial work, it is essential to analyze operations step-by-step, as this would facilitate efficiency and effectiveness of the operations. Several standard techniques have been developed to aid this type of work analysis. These techniques facilitate efficiency and effectiveness of a library or an information handling organization by studying its operations in detail and pointing out the inefficiencies or wastage in time, workflow or movements of individuals handling the operations. PCMT Library has its own multiple activity charts (FLOW DIAGRAM... gives a graphic view of a work area and the management of personnel and materials within that area) for its different library operations. The main operations are as follows:

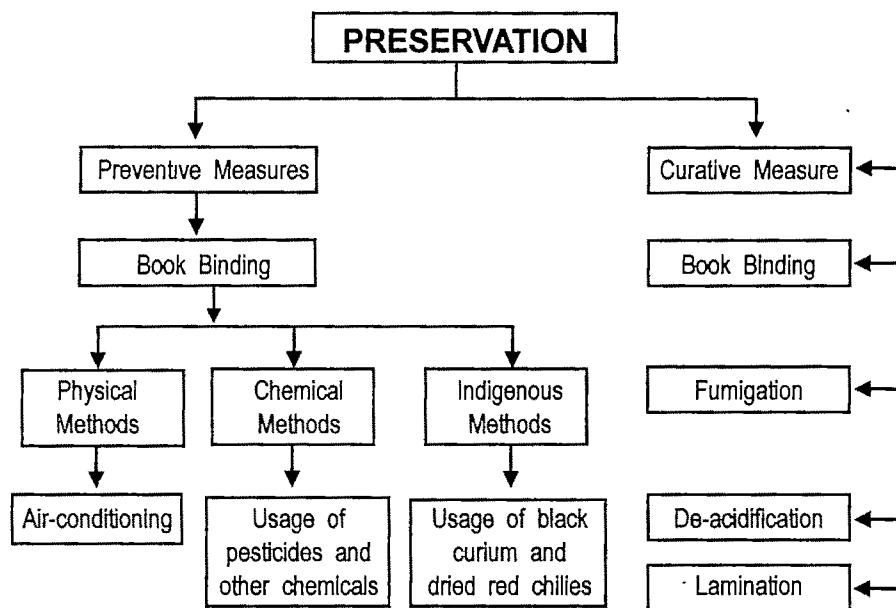
Code	Work Description
01.	Receiving of ordered books
02.	Accessioning
03.	Classification
04.	Cataloguing
05.	Shelving
06.	Distribution of Library Cards
07.	Preparation of Issue Registers
08.	Framing of Library rules, regulations, norms & codes of conduct & notifying accordingly
09.	Circulation Control
10.	Reference Service
11.	Faculty Service
12.	Preservation & conservation of library materials

PROCESS FLOW FOR LIBRARY OPERATION



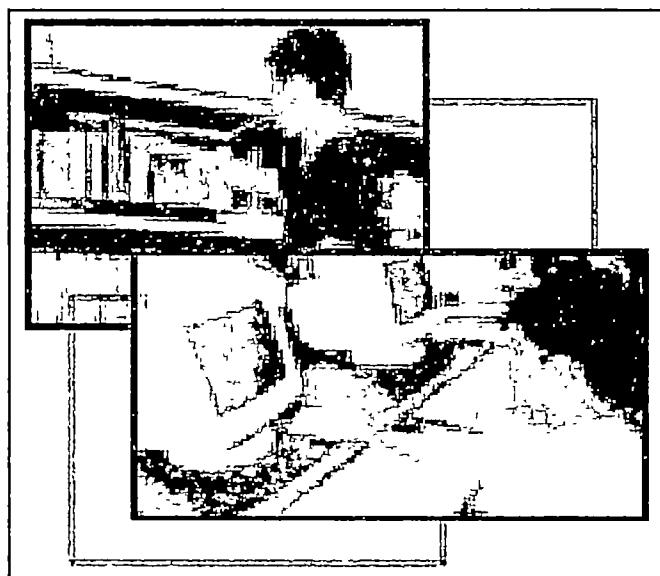






This procedure describes in details the different steps to be followed for the acquisition of library materials, their processing, and circulation of the materials and preservation methods of the same. Acquisition involves the process of book selection, ordering, receipt, physical verification and payment whereas processing involves accessioning, classification, cataloguing and shelving. It also involves subscription of periodicals and procurement of non-book materials like audio and video cassettes, CDs etc. The requirements of the faculty and students are identified and accordingly book selection is done depending on the availability of the fund. After vendor selection, books are ordered, ordered copies are received, verified, payments made and books are sent for processing. Processing involves accessioning of the books-entry is made in the accession register for each copy and the accession number is assigned to each of them. Classification number is given following the Dewey Decimal Classification System and Cataloguing done following Anglo American Cataloguing Rules. Catalogue cards are prepared and books are arranged in shelves. Circulation involves membership procedure and charging and discharging of books. Lending and Reading Room Services are provided to faculty and students both. Membership cards are issued to students and Issue register is maintained for the faculty members. In PCMT Library documents are classified by using **Dewey Decimal Classification** (DDC)-19th ed. Catalogues are prepared on the basis of **Anglo American Cataloguing Rules** (Revised, 1988) with the help of **Sears List of Subject Heading** (17th ed.).

Preservation and conservation methods are followed depending on the physical condition of books and other library materials and it is a very important aspect of library operation. Preservation and conservation measures are taken depending on the condition of the books. Books are affected in two ways - physically and biologically. For physical deterioration, binding, lamination etc. methods are taken. For biological deterioration de-acidification, fumigation etc. methods are taken. As preventive measure, temperature & humidity control is done by air-conditioning. Indigenous process is followed by use of black cumin or red chillies to keep the book insects away. Chemicals like naphtha and other pesticides are used if felt necessary.



Besides that PCMT Library maintain information traditionally as follows : -

Records

<u>Format Code</u>	<u>Format Description</u>	<u>Filed in</u>
01.	Quotations	Quotations File
02.	Vouchers	Vouchers File
03.	Purchase Orders	Purchase Orders File
04.	Library Correspondence	Library Correspondence File
05.	Faculty Recommendations	Faculty Recommendations File
06.	Accession Register	Accession Register
07.	Catalogue Cards	Catalogue Cards Cabinet
08.	Readers' Card	Readers' Card Cabinet
09.	Periodical entry register	Periodical entry register

10.	CD Entry register	CD Entry register
11.	Book Cards (Temporary)	N. A.
12.	Students' Requisitions (Temporary)	N. A.
13.	Minutes of Meetings	Minutes of Meetings File
14.	Library Cell Report	Library Cell Report File
15.	Miscellaneous	Miscellaneous File

7. Library Timings

Monday to Friday	9.00 a.m. to 8.00 p.m.
Saturday (except 2nd & 4th)	9.00 a.m. to 6.00 p.m.
Sundays & Public Holidays	Closed

The **PCMT Library** is kept open after 6.00 p.m. to help the users, especially the research students, in carrying out their Research work. Whosoever uses the **library** after office hours (i.e., after 6.00 p.m.) should sign the register kept on the counter to give an idea as to how many users are actually using the **library** after the office hours. Only reference section is kept on till 8.00 p.m.

8. Conclusion

Whatever Information Management is, it perhaps, is concerned with obtaining the best possible value for money from an organization's information resources. In other words, the buzz words in this context would be economy, efficiency and effectiveness in relation to the information or record life cycle - - creation, communication, use, storage and disposal of information. To achieve the 3 Es, numerous tools and techniques, both conventional and non-conventional, have been developed. These include tools and techniques, such as, Information Technology, Standards, System Analysis, Work Analysis Techniques, Monitoring Techniques, Evaluation Techniques, Conventional Techniques of Classification, and Cataloguing etc. As a matter of fact, the entire lot of Management Techniques seems to be applicable to Information Management. Since these techniques have been widely discussed in library and information science literature and are well known to information professionals, details of these have not been given. To conclude, as Best puts it "The field of Information Management has never been more exciting than it is today; our pressing needs, the technologies (and techniques) available to us, and the demands of our business, governments and society as a whole present a challenge to us to find ways of satisfying demands for ever more relevant, up-to-date and accurate information at an economic cost. Whether we succeed or fail is up to us".⁴

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Information Management in the Library of Pallan College

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4. BEST (DP), Ed. *The Fourth Resource : Information and Its management* 1996. ASLIB GOWER, Hampshire, England.

Abstract : Information Management covers the whole spectrum of Information handling activities, technology and its role in information handling as well as various management activities practiced in institutions. The aim of this paper is to present the strategy of Information management by Pallan College of Management & Technology with the tools & techniques they have used for this purpose.

INFORMATION NEED OF DUKPA COMMUNITY OF LEPCHA-KHA (BUXA) IN THE DISTRICT OF JALPAIGURI

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DIPANKAR RAY, JAYANTA MONDAL, JAYANTI MUKHERJEE,
POLLY HIRA, PRASANTA CHAKRABARTI, PRITAM GUREY,
PRITHA MUKHERJEE, SANMOY CHAKRABARTI, SANTANU
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Introduction

Information need may be known through the appraisal of the community—its people and their role and characteristic features, its economic activity and occupational pattern nature of social and cultural life and other aspects which are reliable indicators from which the nature and contents of information need could be derived.¹

Two problems are there. First, people in small areas do not think about information needs and if their area of dwelling becomes segregated by small hilly valley, then the existence of information needs becomes a chance factor in the life depending on the outsider informative people who can aware them about the need when they enter into their residential area. So the materials gathers through the use of different methods to assess the information need of the rural people are found to be complementary in character. This may be only a descriptive account of the rural people. Secondly, the rural people mostly are the non-users of the library, because a library appears to be day-dreaming to them, especially in a remote area like Buxa-Duar.

The term 'Non-user' of the libraries and information centers connotes two different ideas. First, when the literate persons do not use the library and information centers, they may be called as non-users of the library. In our survey we did not observe such category of non-users. But in this case we specifically mean those parts of the illiterate population as 'non-user' who have no formal association with the library. This part of the population may be called as under-privileged non-user, as the case with our present survey. Prof. Alina has rightly stated that "the under privileged non-user is some one who is denied the opportunity of using the library either because the services are not there or if they are at all, he is not properly equipped education-wise to get benefit from such services."²

Basically the illiterate poor people have no utmost desire of the modern amenities. In the context of changing scenario they are getting the taste of modern privileges. Still their needs in their regard are unexpressed and these unexpressed needs may be converted into expressed needs when they require information about the concerned item. Community information then may be

necessary to combat deprivation by enabling them to raise their living standards to the level of their rights in the law and this study shows that the crises of the daily problems should be touched by providing helpful information services.³ Dukpa community, being the dwellers of 12 villages spread over Buxa-duar hill, are basically under privileged non-users. But first of all they are illiterate and poor community system in addition to their socioeconomic status play a great role in this respect. Superstitions and religious rituals are other two barriers in this pathway.

Though in the context of changing scenario, they are using solar energy-one non-conventional source of energy, but on the other hand to secure their daily job, they are bound to go elsewhere. Thirdly, small population of the community supplies lesser respondents while conducting the survey but attempts are made firstly centering upon their day-to-day needs and problems and then our emphasis shifted to special information needs.

Any further survey in future on such community will manifold their information needs and we are hoping that future will ensure more and more surveys by changing the present scenario at least to a satisfactory extent.

Objectives of the Study

The general objective of the study was to make an in-depth assessment of the information needs of "Dukpa Community" of Lepchakha and Omchhulum (Buxa) in the district of Jalpaiguri. The objectives of the study are as follows;

1. to know the persons of the locality who are engaged in the various professions.
2. on the basis of the needs of the Dukpa community, information services and the functions of various agencies such as government offices, banks, schools, Panchayet, voluntary organization etc. have been studied.

Scope and Coverage of the study

This study had been carried out in two villages viz., Lepchakha and Omchhulum (Buxa) in the district of Jalpaiguri, West Bengal. The total population of Dukpa Community is 1909⁴ out of which the number of respondents were 70.

Methodology

The present study was designed to explore the information needs of the "Dukpa Community" of Lepchakha and Omchhulum (Buxa) in the district of Jalpaiguri which is heavily dependent on empirical data. The study was almost entirely based on primary data collection through field survey and also partially collected from secondary sources which have been used to supplement the survey data.

The methodology used for conducting the research are as follows :

1. Reaching the survey spot in person and making all necessary preparations.
2. Doing the actual survey on the spot data collection through various means taking help of local people and guide.
3. Analyzing the data with statistical tables etc. and writing the actual reports with the help of data and information alongwith our personal opinion.

The entire study was conducted through these following steps :

Pilot Survey :

Before conducting the survey a preliminary view of "Dukpa Community" of Lepchakha and Omchhulum (Buxa) in the district of Jalpaiguri was made.

Selection of the sample for field survey :

"Dukpa Community" of Lepchakha and Omchhulum (Buxa) in the district of Jalpaiguri were selected for the survey. Most of the villagers are farmer, labourer, fruit gatherer, and cattle keepers.

Geographical location and some other information about Buxa-Duar

District	:	Jalpaiguri
Subdivision	:	Alipurduar
Gram Panchayat Samiti	:	Kalchini
Gram Panchayat	:	Rajabhatkhawa
Total Number of Villages	:	12
Number of Villages Surveyed	:	2 (Lepcha-kha and Omchhulum)
Pradhan	:	Francis Toppo (RSP)
Upa-pradhan	:	Nani Baserao (CPM)
Elected Members (From Lepcha-kha) :		

Pasang Tshering (Elected Member)

Fuba Dukpa (Leader)

The myth goes as the scholars received from the interpreter of the Survey team that the Dooars may fall in the following order of succession the Tista River and the Manos.⁵

It is known from R. Boilean, "Pemberto's Report on Bootan" (under Section II, Roads) Buxa Dooar was selected for admission and return of the Missions by Mr. Bogle and Captain Turner. But the Bootaneans forced the Mission's return (made by Pemberton) along the more arduous Buxa-Dooar than that of Cheerung. Even Bootan Government selected Buxa-Dooar for the travelling of foreign embassies to their country, because it was the most difficult entrance to their country.⁶

Flora and Fauna of Buxa-Duar⁷

Flora : Orchid grows during March-April, usual flowers are Mandar (Acacia), Sonajhuri (Amaltash), Choluni, Chikrasi, Gambhar, Toon, Teak, Lampati, Lali etc. Panisans, Panilehra (creeper), Shirish (black/white) etc.

Fauna : 232 species of birds, including the rare species of Himalayan Griffon, Honey buzzard, Black- backed vulture, Great Indian Hornbill, Rufous-necked hornbill, white-browed fly catcher etc. Black panther (Miloyenses), Dhole (Indian wild dogs), Flying squirrel (Giant Himalayan squirrel), Red panda, Red sea crab etc. Golden langur, Royal Bengal Tiger, Asian elephant, Gaur, Barking deer (Mounticus munjack) etc. are found.

History and Origin

1129 was the year when Shubdrung Nwang Nam Gyal Dukpa, popularly known as Guru Rimpoochi migrated from Relung Monastery of Tibet. He founded Dukpa Kngyad School mainly for unifying the communities of Bhutan (Mon, Due and Druck) through 'Choesi system'. Drupes migrated from Bhutan, Druk Yul or Lhomon. In January 1865 British captured Bhutan and included in mainland of India and 'Drupkas' became 'Dukpa'. Before that tribal communities were known as 'Manpa' who were practitioners of 'Bonismn' (worship of nature). At present the Grand Lama is Tiku Zimi Shreda. Guru Rimpoochi was the eighteenth lama. Reincarnation happens to be the popular belief among the Dukpa regarding the birth of Lamas. Dukpa fought six wars against other communities in Bhutan and thrice against Kublai Khan.

Tabulation and Analysis of Data

Collected data are presented in tabular from. After tabulation the tables were individually interpreted item-wise. The data were explained mostly on the basis of percentage and distribution.

Findings and Data Analysis

This study tries to identify the information needs of the "Dukpa Community" of Lepchakha and Omchhulum (Buxa) Villages in the district of Jalpaiguri on the basis of different variables calculated assigned for the purpose. To find out the life style and socioeconomic conditions a number of tables and their interpretation have been discussed below.

Table 1 : Distribution of total population of Buxa Duar under Rajabhatkhawa Gram Panchayat (According to Sensex Year 2001)

Sl. No.	Name of the Village	Population		Total	% of Total Population
		Female	Male		
01.	Lhapchakha	110	135	245	13
02.	Chunabatti	206	240	446	23
03.	Khataline	20	25	45	2
04.	Daragaow	35	41	76	4
05.	Tashigaow	67	77	144	8
06.	Sewgaow	31	40	71	4
07.	Shokeydinkha	08	16	24	1
08.	Adma	85	121	206	11
08.1	Panbari	21	15	36	2
08.2	Phoolbari	50	55	105	6
09.	Lamna	30	37	67	3

10.	Sadargazar	52	81	133	7
11.	Lalbangla	86	92	178	9
12.	Oncholum	65	68	133	7
	Total	866	1043	1909	100
	Percentage	46	54	100	*****

This table indicates the information about the total population according to their villages. Out of total 1909 population 886 of them are female (46%) and 1043 (54%) are male. And as the table shows that most of the people (23%) live in the village Chunabatti and the least of them is in the village Shokeydinkha.

Table 2 : Distribution of total population of Two Villages

Name of the Village	Population	
	Male	Female
Lepcha Kha	135	110
Omchhlum	68	65

The above table shows that total population of the two villages, we have surveyed.

Table 3 : Distribution of respondents In respect of age and sex

Age Group (In Years)	Male	Female	Total	% of Respondents
Below 18	5	2	7	10
18-28	11	7	18	26
28-38	9	3	12	17
38-48	7	2	9	13
48-58	5	5	10	14
Above 58	10	4	14	20
Total	47	23	70	100
Percentage	67	33	100	*****

The above table shows that total number of respondents are 70 [100%] and out of those, number of male respondents are 47 [67%] and female are 23 [33%]. The number of respondents below 18 years are 7 [10%], 18-28 years are 18 [26%], 28-38 years 12 [17%], and so on. It indicates that the young generation who have the age group of 18-28 years are mostly interested to express their needs.

Education :

UNICEF conducted Buxa Shiksha Jyoti Abhiyan through an NGO named CIDHI [Centre for Institutional Development of Human Initiative], but it was stopped from March, 2006. There are four primary schools in the locality. Out of which the school building at Adma under District Primary Education Program, but it is not running due to lack of teachers. Other three schools are :—

1. Buxa Board Free Primary School (since 1941)
2. Chunabhatti School (since 1941)
3. Lepchaka Government School (since 1986)

In the village Omchchlum there are 32 students and out of them 56 go to Lepcha kha Government School.

Table 4 : Distribution of respondents in respect of literacy

Age Group (In Years)	Literate		Illiterate	
	Male	Female	Male	Female
Below 18	3	1	2	1
18-28	7	3	4	4
28-38	7	1	2	2
38-48	4	0	3	2
48-58	2	0	3	5
Above 58	2	0	8	4
Total	25	5	22	18
Percentage	36	7	31	26

The above table shows that of the total respondent only 30 [43%] are literate and most of them are male. And rest of the respondent are illiterate (57%).

Table 5 : Distribution of respondents in respect of Educational Qualifications

Age Group	Educational Qualifications					Total
	I-IV	V-VII	X Pass	XII Pass & Above	Other Qualifications	
Below 18	3	1	0	0	0	4
18-28	5	3	2	0	0	10
28-38	4	3	1	0	0	8
38-48	3	1	0	0	0	4
48-58	2	0	0	0	0	2
Above 58	1	1	0	0	0	2
Total	18	9	3	0	0	30
Percentage	60	30	10	00	00	100

The above table shows out of literate respondents only 3 [10%] have passed class X and no one goes beyond class XII. Most of the literate respondents' educational qualification is from class I to IV.

Professions & Occupations :

Their main professions are Farming, and cattle keeping. Although they have their other occupations like labourer, carpenter, business, liquor trading etc. Few people are also involved in government jobs.

Table 6 : Distribution of respondents In respect of Occupation

Age Group	Farmer		Labour		Carpenter		Businessman		Govt. Service Employee		Cattle Keeping		Liquor Trading		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
18-28	6	3			3										3	15
28-38	6		3	3					3							15
38-48			3									3		3		9
48-58																0
Above 58	9	3					9		3		3					27
Total	21	6	6	3	3	0	12	0	3	0	6	0	3	3		66
Percentage	32	9	9	5	4	0	18	0	4	0	9	0	5	5		100

Regarding the distribution of respondents in terms of their occupation there are 7 major categories. The highest number. of respondents lie in the age group above 58 and it is 27. Then so far as female respondents are concerned it is the 'liquor-trading' category where only 6 respondents are found.

Again the age-range 28 to 38 and 38 to 48 only respondents under 'Labour' category are available at the time of study. If the combination of both male and female respondents are to be needed then one can look for the category 'Farmer' where the concerned ratio is 7:1. The ratio of highest : lowest female respondents found under 'Farmer' and 'liquortrading' category and, i.e. the highest percentage was observed in case of male respondents found under 'Farmer' category which is 32% and lowest under each of the category-'Carpenter', 'Government. Service Employee' which is 4%.

Table 7 : Distribution of Income according to their age group (per month in Rs.)

Age Group	Below 500	500 to 1000	1000-2000	2000-5000	Above 5000	Total
18-28	6	3	6	—	—	15
28-38	9	3	9	3	—	24
38-48	—	6	—	—	—	6
48-58	—	3	—	—	—	3
Above 58	—	3	12	2	1	19
Total	14	18	27	5	1	66
Percentage	21	27	42	8	2	100

The table shows the most of the people earn at most Rs. 1000 to Rs. 2000 [42%] and the least of them is above Rs. 5000. This statistics show that the most of the villagers are poor.

Table 8 : Distribution of respondents Interested in occupational drift in two villages.

Occupation	Omchhulum	Lepchakha	Total
Farmer	1	2	3
Labour	0	3	3
Carpenter	0	1	1
Businessman	1	1	2
Cattle Keeping	0	1	1
Total	2	8	10
Percentage	20	80	100

Among 10 respondents [100%] of Ochlum and Lepchakha village 20% respondents of Ochlum village and 70% respondents of Lepchakha village are interested in occupational drift. These interested respondents are mainly farmers and labourers.

Table 9 : Distribution of persons working within & outside the villages with respect to their occupation

	Farmer	Labour	Carpenter	Cattle Keeping	Businessman	Total	Percentage
Inside	7	1	1	3	3	15	52
Outside	3	5	1	1	4	14	48
Total	10	6	2	4	7	29	100
Percentage	34	21	7	14	24	100	****

Some people of the Dukpa Community are working inside their villages and some are going outside [mainly Bhutan] their villages. Among 29 respondents [100%], 51.72% are working inside their villages and 48.27% are working outside their villages. Labours are used to go to Bhutan frequently.

Table 10 : Distribution of persons with respect to the occupation having information regarding financial assistance from different sources.

Sources	Farmer	Labour	Carpenter	Cattle Keeping	Businessman	Govt. Servant	Total
Panchayet	9	4	0	0	3	0	16
Govt. Office	1	1	0	0	1	0	3
Bank/Post Office	0	0	0	2	0	1	3
Mahajan	1	0	0	0	0	0	1
Total	11	5	0	2	4	1	23
Percentage	48	22	0	9	17	4	100

The table clearly shows that farmers need most of the financial information [48%] than any other person. It also shows that carpenters don't need any financial information from any of the available sources. The second most category is the Labourer [22%], and there after, Businessmen [17%], Cattle Keeper [9%] and govt. servants are [4%] respectively. So there is a need to improve the situation of the Carpenter, Government Servant, and Cattle Keeper.

Health and Hygiene :

The communicable disease mostly found is Chiloni (Skin disease) other common diseases are worm disease, T.B. Anemia (iron disease), malaria. Rasum (garlic) is used for curing many diseases. The locals mainly believe in jha (pow) for treatment of various diseases. For delivery cases, locally are called. Poor birth control measures is being noted due to :—

- a. lack of adequate information,
- b. illiteracy

For drinking and other domestic purposes, spring water is supplied through pipes. Medical team rarely visits the village, the last time they were in August, 2006, mortality rate is very low. Average life span is 70 years. No proper sanitation system is prevalent except in 2 houses (in Lepchakha and Omchhulum each). They use soaps and shampoos of some of the reputed brands. For treatment of diseases they visit Health Centers at Kalchini Block (25 kms. from Omchhulum) and Alipurduar (33 kms. From Omchhulum).

Usually, mosquito nets are not used, but prevalence of mosquitoes are noted during rainy season. For protection against leech, salt packs are commonly used.

Table 11 : Distribution of respondents requiring information about new medical developments in respect of their occupation.

Occupation	Through Govt.	Self Financing	None	Total
Farmer	9	0	2	11
Labour	4	2	3	9
Carpenter	2	0	0	2
Businessman	3	2	1	6
Cattle Keeping	1	0	1	2
Government Servant	1	0	0	1
Total	20	4	7	31
Percentage	65	13	22	100

This table indicates the information about new medical development to different types of occupied person. Out of total 31 respondent [100%], getting help from different sources through out government, self finding and some are deprived, those are kept in none selection. 20 respondent (64.52%) are very much helpful through government, 4 respondents (12.94%) are being helped by self financing and 7 respondents (22.58%) have no information about medical development.

Cookery and Related Things : Food is being prepared thrice a day. They use earthen ovens and wood as fuel for cooking. They usually use aluminum utensils.

Food : Their staple food is rice, millet, maize, roti (chapatti) and meat (mainly pork).

Beverage : They drink ginger (marwa), Chung (rice/marwa/wheat/maize), baccha (bacha, stronger), Roxy (wine). They also drink foreign drinks from Bhutan. They drink salted tea called Suja (tea, salt, butter) as soft drinks.

Table 12 : Distribution of persons in various age groups who are addicted.

Age Gr.	Addictions						Total	
	Hard Drinks		Smoking		Gutkha			
	Male	Female	Male	Female	Male	Female		
Below 18	0	0	0	0	0	0	0	
18-28	5	1	1	0	5	1	13	
28-38	2	0	1	0	1	0	4	
38-48	2	4	1	0	0	0	7	
48-58	0	0	0	0	0	0	0	
Above 58	4	1	2	1	4	1	13	
Total	13	6	5	1	10	2	37	
Percentage	35	16	14	3	27	5	100	

The Dukpa Community is a very addicted community to different addictions. Among 37 respondents [100%] of various age groups 35.13% male & 16.22% female respondents are hard drinkers, 13.51% male & 2.70% female are smokers and 27.03% male & 5.40% female have the addiction of Gutkha.

Religion and Festivals

By religion, Dukpa are Buddhist and belong to the Mahayana sect. They believe in ghosts. Penden is the main Male God and to them Lamas symbolized whom they believe to be the reincarnation of lamas. Main festival of the community is Archery (Laser) celebrated on the new year (according to Buddhist Calendar; Feb). On 22nd August they celebrate 'blessed rainy day' (play with stones Dunga play). Within an interval of three months, Buddha Purnima is celebrated.

Social Life

Birth Control

They have become aware regarding birth control than earlier. Delivery cases are being handled by midwives (Dhai System).

Rituals After Death

Following the death of a person the Lama is invited. The Lama calculates the time and date of demise with the help of date of birth and time (They consider the date of birth from the date of conception). If Lama thinks it is a normal death he instructs for burning [cremation]. If it is not a normal death the dead body is put in oil or water and finally the dead body is taken out from the room after being directed by the Lama to do so.

Women have no funeral rights. If it is found anyone lacking sons, nearest relatives get such rights. Generally wooden cremation is done. Dead bodies are kept for two to three days (maximum) only by covering clothes. Rituals following death of a person continue for 21 days. Lama comes to the home and takes food for consecutive 21 days along with other persons. The person lost his nearest relative has to bear such expensive rituals and on the 22nd day with 'Gharpuja' the whole rituals come to an end.

Marriage System

Gandharva marriage is most prevalent among the community. If a couple likes each other and if the society agrees then they are allowed to live together. Generally no occasion is performed in such cases. Marriage proposals come from male side. After marriage a girl may reside in her husband's house with her entire family or vice-versa. After getting divorced if approaches come from female side she must give the property (as Dukpa's inherit their property from their maternal side) to her husband and vice versa. Divorce cases are self-handled. Polygamy is practiced in the community among either of sexes. But in case of male persons, they can remarry only with the consent of their previous wives.

Dress

The familiar dresses of the village communities are;

Female :

1. Kira (upper skirt)
2. Tego (top outside)
3. Wanjo (inner wear)
4. Keyra (waist belt-cost 650 rupees)
5. Coma (type of ornament worn over blouse)
6. Racho (Veil)

Male :

1. Gho (Bokhu)
2. Lagay (white inner)
3. Keyra (belt)
4. Kapney (like shawl)

Table 13 : Distribution of respondent showing preferences of entertainments by age group

Age Group	Radio	TV	Games	Total
Below 18	9	8	16	33
18-28	7	8	0	15
28-38	1	3	1	6
38-48	0	1	0	1
48-58	0	2	0	2
Above 58	7	6	0	13
Total	25	28	17	70
Percentage	36	40	24	100

As far as distribution of respondent regarding entertainment is concerned the below 18 age group is of highest density in all fields of entertainment i.e., Radia, T.V. & Games, than the other age groups. And Games consists of highest no. of respondents, i.e., 16. The ratio of highest total and lowest total respondents lies under 'Below 18' '38-48' age group respectively which are 33:1. Some more interpretations are given below :

Field of entertainment	Age group	Ratio (highest : lowest)
(a) Radio	Below 18 & 28 to 38	9 : 2
(b) TV	Below 18-28 & 38-48	8 : 1
(c) Games	Below 18 & 28-38	16 : 1

Information Need

The information needs among the community are shown clearly in the form of tables below :

Table 14 : Distribution of persons retrieving information In respect of sources.

Age Gr.	External Sources						Internal	Total
	Panch-ayat	Block Office	Local Market	Media	Tourist	Hospital		
Below 18	—	—	—	1	0	0	0	1
18-28	6	2	2	5	0	2	4	21
28-38	3	1	2	3	0	4	5	18
38-48	1	0	1	0	0	0	0	2
48-58	1	0	1	0	1	1	0	4
Above 58	5	1	6	0	0	2	5	19
Total	16	4	12	9	1	9	14	65
Percentage	25	6	18	14	1	14	22	100

This tables indicates the persons according to different age groups from various external and internal sources out of total 65 respondents [100%], 51 respondents [78.47%] are retrieving information from external sources and 14 respondents [21.53%] are retrieving information from internal sources. Among external sources 24.6% are retrieving information from Panchayat, 6.15% from Block office, 18.46% from local market, 3.84% from media, 1.53% from tourist and 13.84% from hospital in total.

Table 15 : Distribution of respondent showing Information need by the people of the community In respect of their occupations.

Occupation	Information About New Read	Information About School	Information About Health & Hygiene	Information About other facilities available	Total
Farmer	16	3	10	8	37
Labour	3	1	3	3	10
Businessman	2	2	3	3	10
Government Servant	0	0	1	1	2
Cattle Keeping	1	0	0	0	1
Total	22	6	17	15	60
Percentage	37	10	28	25	100

This table indicates the information need of persons according to their different occupation. Out of total 60 respondents [100%], 22 respondent (36.66%) have information about newly built road. 10% population knows about the existence of school and 28.33% are aware of health and hygiene factors, whereas information on other facilities confined to 25%.

Total 16 : Distribution of persons having Information in Social Welfare Schemes by different organizations.

Occupation	Social Welfare Schemes						Total
	Indira Abas Joyona	Jawar Rojgar Joyana UNICEF	DRDC	ICDP	DPEP	Buksha Shiksh Jyoti Abhiyan	
Farmer	3	2	3	9	2	0	19
Labour	0	1	1	2	1	1	6
Carpenter	0	0	1	0	1	0	2
Businessman	0	2	4	1	2	2	11
Cattle Keeping	0	1	0	1	1	0	3
Govt. Service	1	0	0	0	0	0	1
Total	4	6	9	13	7	3	42
Percentage	10	14	21	31	17	7	100

A certain amount of people of the community is aware about various information about different social welfare schemes available from different organizations. Among 42 respondents in total [100%], 9.52% respondents have information about Indira Abas Joyona, 14.28% have information about UNICEF, 21.43% have information about DRDC (Solar), 30.95% have information about ICDP, 16.67% have information about DPEP, and 7.14% have information about Buksha Shiksha Jyoti Abhiyan.

Problems of Dukpa and few suggestions

1. Out of 100 days, they have worked for 14 days only, even payment was not cleared after 3 months. More number of working days should be ensured along with proper payment scheme.
2. Unequal distribution of BPL Cards/wrong identification created problems like (before Panchayat)
 - a. Lack of medical facilities in hospitals
 - b. Lack of Senior Pension benefits

So, it should be checked that BPL cards must be issued to those who are needy, but not to those people living above the poverty line.

3. Tribal certificates are not issued properly and even below 18 years, this also must be given in such a way that the people of that tribal community should get advantages out of those certificates.

Conclusion

This study tries to identify the information need of the Dukpa Community of Ochhlum and Lepcha kha village (Buxa) in Jalpaiguri district of West Bengal. It is revealed in these findings that information needs (explicit, implicit and tacit) of the villagers are diverse and it varies from person to person. The present study gives the brief account of the life and culture of the villagers with their traditional information needs and their sources. The different aspects of the survey and its subsequent study reveals the settlement, material culture, social organization, education, political system etc and has been dealt under separate heading so as to help, understand the life and problems of the villagers in a better way. The development of any community implies economic and social improvement. On the basis of this analysis, it may be concluded that the Dukpa community requires information on every aspect of life for their overall socio-economic upliftment.

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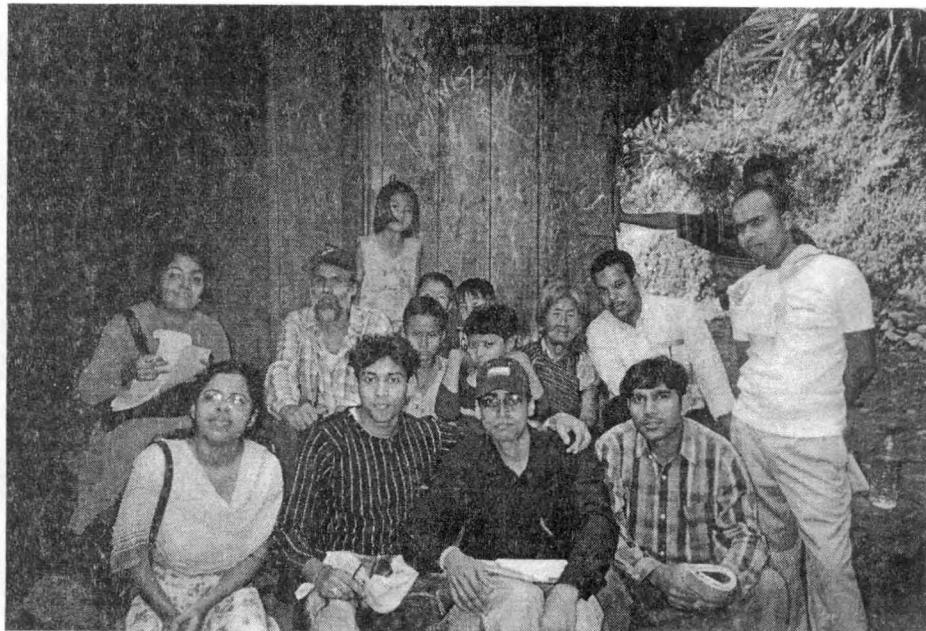
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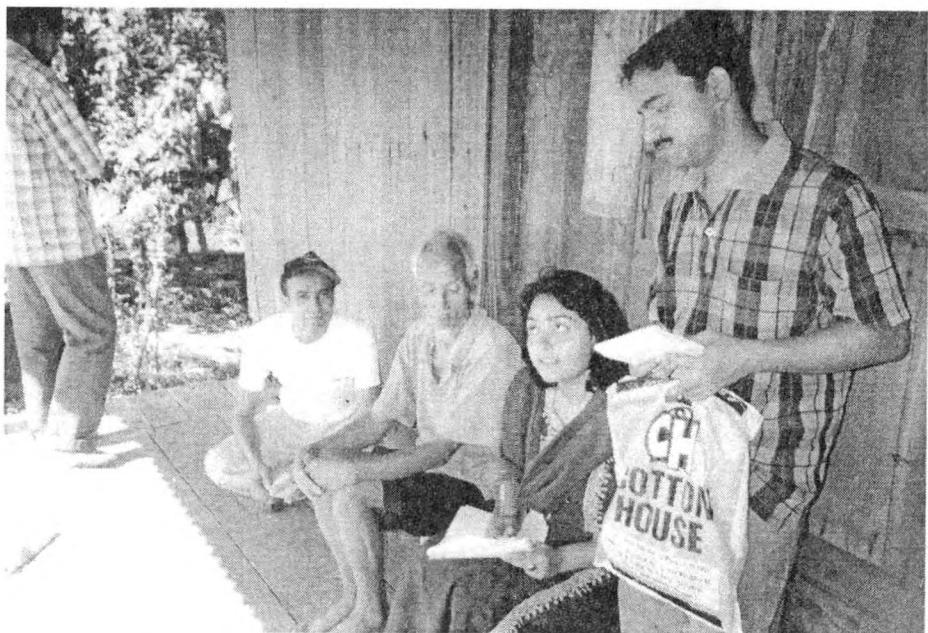
Abstract : This paper tries to identify the information need of the Dukpa Community of Lepcha Kha who are basically non user of the formal information system. The profile of the Community has been given here so that the needs of the community be understood.



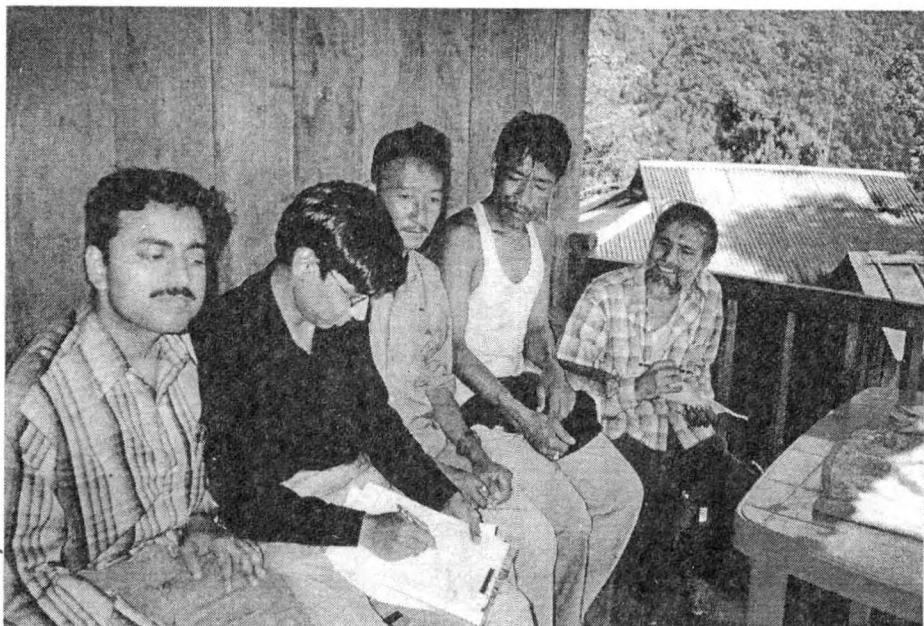
1. Supervisor and Field Assistants are in Front of Sonam Chede's House



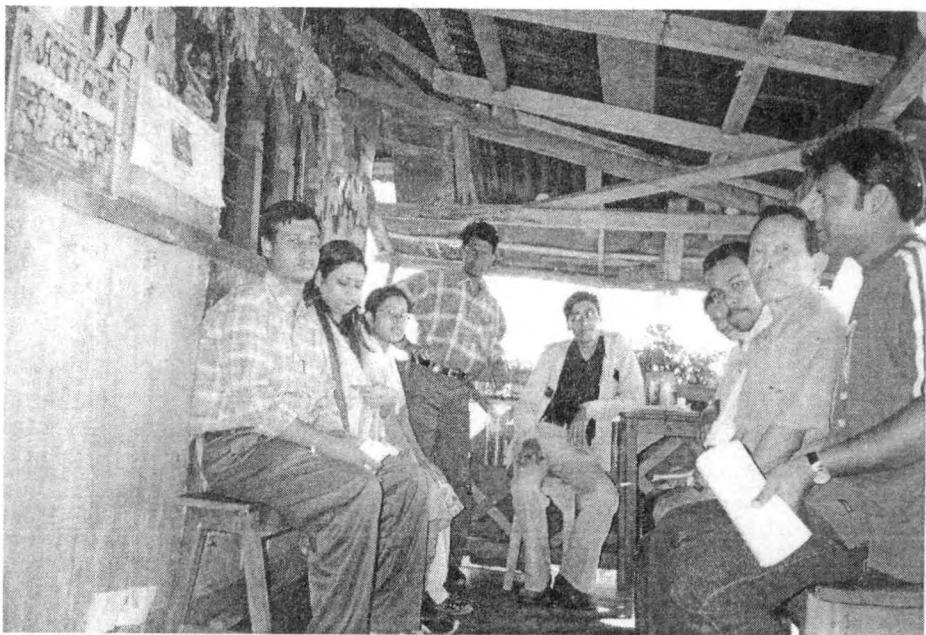
2. Inside the House of Sonam Chede



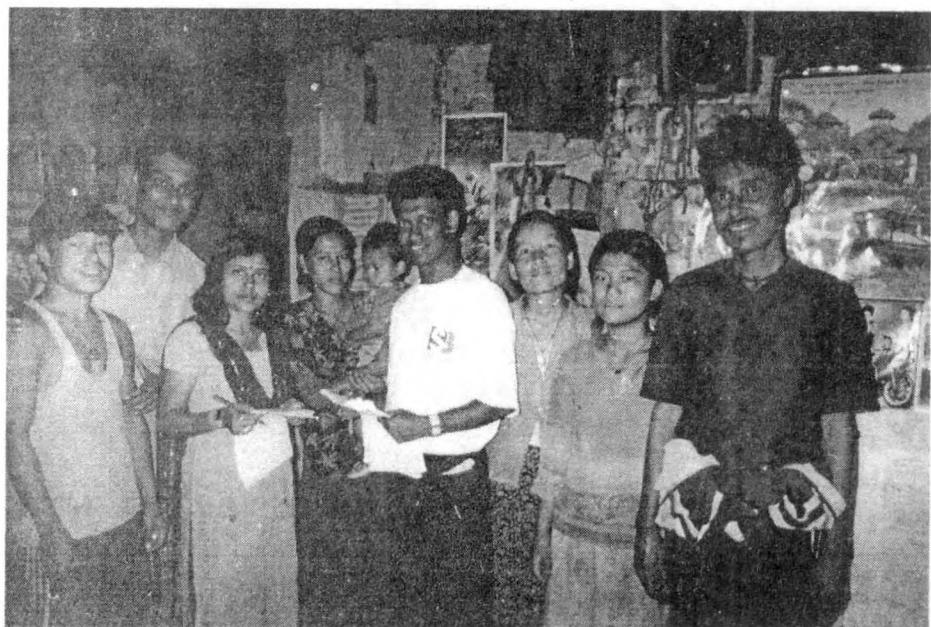
3. Field Assistants are Interviewing



4. Supervisor and Field Assistants are Interviewing



5. In the house of one of the Respondents



6. Field Assistants are interviewing

ELECTRONIC RESOURCES IN THE LIBRARY OF THE UNIVERSITY OF CALCUTTA

ARABINDA MAITY*

Central Library, University of Calcutta, Kolkata-700 073

1. Introduction :

The World Wide Web, popularly known as WWW is the most versatile and fast growing communication medium on the internet. It becomes the most useful means of providing internet resources combining hypertext and multimedia to provide a huge network of educational, governmental and commercial resources. In the recent times, most of the universities create their own website through which they can spread their information across the globe and the users on the other hand can access easily and quickly whatever may be their position.

2. E-Resources :

According to the Dictionary for Library and Information Science, the electronic resources may be defined in the following way :

"Materials consisting of data and/or computer program(s) encoded for reading and manipulation by a computer by the use of a peripheral device directly connected to the computer or remotely via a network such as the internet".

3. Website :

A Website is a collection of web pages, images, videos and other digital assets that is hosted on one or several web server(s), usually accessible via the internet, cell phone or a LAN.

Webpage is a document, typically written in HTML, that is almost always accessible via HTTP, a protocol that transfers information from the webserver to display in the user's web browser.

3.1. University Website :

Though the University of Calcutta was established in the year 1857, but till 2002 there was no website of its own. The expected website was inaugurated on 26.03.2003 by the Hon'ble Vice-Chancellor Prof. Asis Kumar Banerjee. The address of university website is <http://www.caluniv.ac.in>.

4. E-Resources of the Calcutta University libraries through the website :

Through the university website the user can access the following electronic resources:

4.1. E-Journals :

The e-journals again grouped into the following two categories:

* Assistant Librarian and also ex-student, DLIS, CU.

4.1.1. Electronic Journals through the UGC-INFONET Programme :

Through the UGC-INFONET programme the university can get the access to near about 3612 journal titles for various 42 subject disciplines. The IP address of the various campuses has already been given to the UGC. The different vendors of the journals activated those IP addresses. Therefore, any user can access the electronic journals within the premises of the any campus of the university. The different disciplines and corresponding number of e-journals are shown in the following tables.

DISCIPLINE	NO. OF JOURNALS	DISCIPLINES	NO. OF JOURNALS
Agriculture	38	Geography	45
Anthropology	45	History	216
Archaeology	17	Humanities	25
Architecture	09	Information Science	19
Arts	184	Language & Linguistics	79
Astronomy	17	Law	61
Biochemistry	01	Library & Inf. Science	35
Biology	260	Literature	158
Biotechnology	15	Management	16
Botany	38	Mathematics	191
Business	44	Philosophy	124
Chemistry	166	Physics	178
Commerce	03	Political Science	156
Computer Science	135	Psychology	148
Culture	20	Religion	55
Earth Science	64	Science	55
Ecology	07	Social Science	160
Economics	192	Sociology	155
Education	160	Statistics	36
Engineering	159	Technology	18
Environmental Studies	92	Zoology	16

4.1.2. IEEE Publications :

The University libraries has already purchased the IEEE publications (full package on-line level II, 5 users) for 2007 through INDEST-AICTE consortia. These IEEE publications consist of the following three things:

4.1.2.1 IEEE Journals and Magazines :

Near about 192 titles of journals and magazines are there. These are arranged according to the alphabetical order as follows:

Alphabet	No. of Journals and Magazines	Alphabet	No. of Journals and Magazines	Alphabet	No. of Journals and Magazines
A	12	J	00	S	23
B	04	K	01	T	03
C	31	L	03	U	01
D	06	M	15	V	05
E	22	N	09	W	02
F	01	O	02	X	00
G	04	P	16	Y	00
H	01	Q	01	Z	00
I	24	R	05		

4.1.2.2. Conference Proceedings :

Near about 3957 number of conference proceedings is present. These are arranged alphabetical order as follows:

Alphabet	No. of Conference Proceedings	Alphabet	No. of Conference Proceedings	Alphabet	No. of Conference Proceedings
A	455	J	04	S	443
B	75	K	18	T	193
C	426	L	65	U	65
D	247	M	403	V	98
E	363	N	146	W	103
F	92	O	80	X	00
G	52	P	288	Y	01
H	150	Q	23	Z	00
I	368	R	219		

4.1.2.3. Standards :

Near about 1760 number of standards are present in the web catalogue. These can be searched either by **standard number**, by **Industry** and also by **numerical listing**. In industry column, again the standard are grouped into the following 11(eleven) broad subject headings. These are as follows:

- Communications
- Computer and Electronics
- Electric Machinery
- Health information and medical devices
- Learning technology
- Nuclear technology
- Power generation
- Testing, Instrumentation and measurement
- Transportation
- Transmission and distribution
- Wired and wireless data communication

4.2. On-line Journal Archive (under TEQIP) :

The University library has already purchased Springer Online Journal Archive which consist of 929 journals in different 10(ten) subject areas. These Journals appear from volume 1 and Issue no. 1 to the year 2006 in the website. The Library users can access these journals for life time as these are the journal archival material. The number of journals according to the various subjects is mentioned below :

SUBJECT	NO. OF JOURNALS	SUBJECT	NO. OF JOURNALS
Biomedical and Life Sc.	162	Engineering	97
Behavioural Science	61	Physics & Astronomy	69
Mathematics	104	Earth & Environmental Sc.	97
Business and Economics	51	Computer Science	93
Humanities, Social Sc. and Law	120	Chemistry & Material Sc.	75

4.3. Electronic Books (Under TEQIP) :

The University library has already purchased 9041 Springer E-books from the copyright year 1999 to 2007 under TEQIP. These are grouped into 24 (twenty four) different subjects as follows:

SUBJECTS	NO. OF E-BOOKS	SUBJECTS	NO. OF E-BOOKS
Architecture	243	Mathematics	524
Biomedicine	243	Physics	597
Chemistry	269	Miscellaneous	4054
Computer Science	625	Psychology	90
Economics/Management Sc.	451	Social Science General	119
Education	145	Linguistics	35
Environment	112	Architecture/Design	03
Geosciences	177	Geography	28
Humanities/Arts	06	Philosophy	148
Humanities/Arts/Design	10	Science General	13
Law	41	Statistics	106
Life Science	373	Engineering	629

4.4. On-line Catalogue :

Through on-line catalogue user can access the database of the libraries mainly the Books, Ph.D theses, Medical Dissertations, BNCC Collections, Peace Studies Collections and Biman Behari Majumdar Collections. Automation of the University library has been undertaken under INFLIBNET(Information and Library Network), an autonomous inter- university centre of UGC in the year 2001. The library started automation of the library activities using SOUL (Software for University Libraries), a versatile and user friendly software from INFLIBNET centre. This software works in client/server mode in windows database creation and web access.

4.4.1. Books :

Near about 2 lakh number of records of books of the 4 campuses of the university are now available in the web catalogue. The location of the book are mentioned in the website in the form of ALP (Alipore Campus Library), TSP (Taraknath Siksha Prangan, Ballygunge Science College), RBSP (Rash Behari Siksha Prangan, Rajabajar Science College) and CL (Central Library, College Street Campus).

Anyone can search the desire books either through any of the following way :

- Title
- Author's Surname
- Author's Forename
- Corporate Author
- Conference/Meeting
- Subject heading
- Class number
- Publisher and
- Series.

User can access the database through Free Text Search where they have to type the “key word” only. Then all the title will come in which the “key word” belongs irrespective of their position either at the beginning, or at the middle or at the end.

Suppose one user wants to search through Free Text Search method. He type the term “Classification”. Therefore all the books relating to “Classification” will come in the following way:

Title	Author	Dept/Corporate Body	Type of material	Location
A descriptive account of the Colon Classification	S.R. Ranganathan (Author)		Book	RBS
A manual of classification for librarians and bibliographies	W.C. Berwick Sayers (Author)		Book	CL
A modern outline of library classification	J.Mills (Author)		Book	ALP
A modern outline of library classification	J.Mills (Author)		Book	CL

Again if he clicks on the **fourth title** then the details description of the item will come in the following format.

	Details description of Items
Title	A modern outline of library classification
Author	J.Mills(Author)
Language	Eng
Department	
Corporate Body	
Type of material	Book
Conference/Meeting	
Edition	
Publisher	Asia Publishing House
Place of Publication	Bombay
Year of Publication	1960
Accession Number	266237 / 238496 / 239278 / 124876
Library Location	CL
Class No.	025.4
Book No.	M626a
Physical Description	lx,343p.
Subject heading	CLASSIFICATION
Note	
Series	
Volume	
Part	

User can also search their desired documents using the **Boolean Search** methods i.e. **AND**, **OR**, **NOT** operators.

4.4.2 Ph.D Theses

Near about **12,000** Ph.D theses of the various disciplines which was awarded by the University is now available in the web Catalogue. User can access the database either through any of the following way:

- **Title**
- **Researcher's/Guide's Surname**
- **Researcher's/Guide's Forename and**
- **Department.**

Suppose one user wish to search under the name of the Department of English. He then type “**English**” under the department column, then the result will come in the following way:

Title	Researcher/ Guide	Dept/Corporate body	Type of Material	Location
A comparative study of English and Sanskrit figures of speech	Ajit Kumar Bhattacharyya (Researcher)	Dept. of English	Ph.D Theses	CL
A critical analysis of Danta Gabriel Rossetti's imagery	Phullora Roy (Researcher)	Dept. of English	Ph.D Theses	CL
A study of imagery in Thomas Hardy's poetry	Sumita (Lahiri) Roy Researcher	Dept. of English	Ph.D Theses	CL

Again if he clicks on the first title the details description of the item will come in the following way:

Detailed description of item	
Title	A comparative study of English and Sanskrit figures of speech
Researcher/Guide	Ajit Kumar Bhattacharyya(Researcher)
Language	eng
Department	English
Location	CL
Type of material	Ph.D Theses
Year of Publication	1979

[New Search](#)

[Back to search result](#)

[Show Title & Content Page](#)

Again if he clicks on the icon “**Show Title & Content Page**” then original Title page and table of Content of the original Theses will appear in the screen.

Users can search the database through **Free-Text Search** method and also by **Boolean Search operations**. In any method user can have the record of the Ph.D Theses which contains the bibliographical details along with the exact title and the Content page of the theses.

4.4.3 Medical Dissertations

Near about 10,000 records of the Medical Dissertations are available in the Web Catalogue. These dissertations were submitted by the Medical Students

for getting their MD Degrees. Any user can access these Medical Dissertations following the same procedure as for the Ph.D theses mentioned earlier.

In any case the user can have the record with contains the bibliographical details and also the exact Content page and the title page of the dissertations.

4.4.4 BNCC Collection

Near about **5550** number of documents of the Bengal National Chamber of Commerce and Industry (BNCCI) are present in this database. The collection of Sir N.R.Sarkar which he donated to the BNCCI, when he was the President of the BNCCI, was again donated to the Central Library, University of Calcutta in the year 2004.

Users can search search the database as that of the books mentioned earlier.

4.4.5 Peace Studies Collection

Near about **1803** number of documents of the peace Studies Collection of Prof. Suranjan Das, the Hon'ble Pro-Vice-Chancellor(For Academic Affairs) which he donated to the Alipore Campus Library, is now available in the Web catalogue.

User can search the database like the books mentioned earlier.

4.4.5 Biman Behari Majumder Collection

Near about **210** number of documents of the Biman Behari Majumder Collection is also available in the Web catalogue. User can access the database like the books mentioned above.

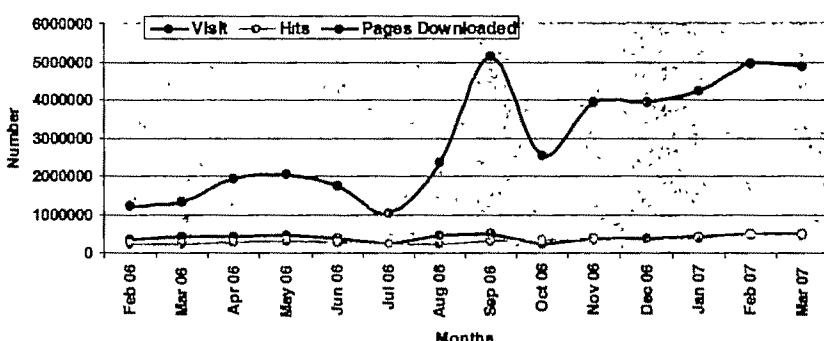
5. Usage of the Website

Users from any corner of the world can access our University website. Now the usage is increasing day by day. Near about 15,000 users visit our University website per day and approximately 4 to 5 lakh users visit the website per month. Usage statistics for <http://www.caluniv.ac.in> from Feb-06 to March-07 is given below:

MONTH	VISITS	PAGES	HITS
February, 2006	3,44,498	12,17,832	2,10,832
March, 2006	3,98,765	13,25,621	2,31,723
April, 2006	4,32,001	19,20,183	2,65,187
May, 2006	4,43,998	20,38,239	2,95,601
June, 2006	3,83,921	17,31,038	2,57,032
July, 2006	2,32,903	10,23,041	2,25,109
August, 2006	4,52,313	23,29,031	2,33,287
September, 2006	4,93,213	51,33,291	2,95,701
October, 2006	2,34,182	25,34,921	3,21,873

November, 2006	3,64,291	39,41,320	3,45,507
December, 2006	3,94,384	39,43,021	3,61,088
January, 2007	4,04,498	42,44,508	3,95,701
February, 2007	4,95,561	49,54,887	4,36,490
March, 2007	4,85,623	48,65,534	4,37,990

Chart: Usage of the Calcutta University Web Site



6. Conclusion :

Through the website, regularly near about 10,000 to 15,000 users can access the University website from their remote place and 2000 to 3000 users use the different Campus and departmental libraries directly. Therefore we can say easily that the library use, rather to say more effectively the library access is increased day by day. This is possible only because the resources of the Calcutta University Libraries is now available electronically parallel to the hard copy.

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